TEXTILE BULLETIN

Vol. 50 JUNE 11, 1936 No. 15

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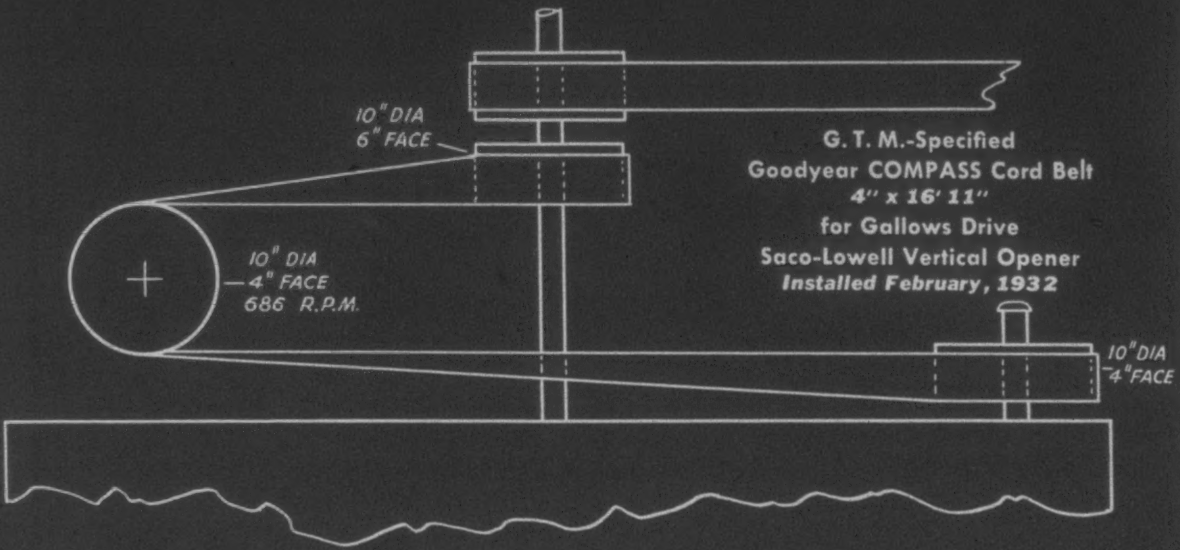

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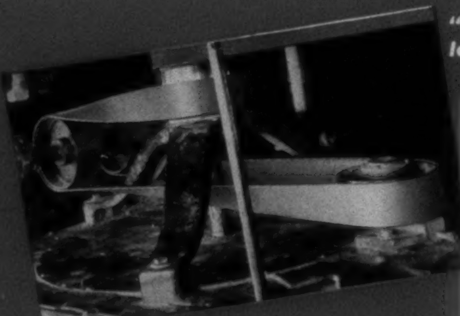

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TEXTILE BULLETIN

VOL. 50—NO. 15 JUNE 11, 1936

The Mechanism of Drying Textile Fibres and Fabrics*

By Lucien Buck
of Proctor & Swartz, Inc.

IN textile and allied industries, the dryer is an important manufacturing unit necessary for the processing of raw stocks, yarns and fabrics, utilizing animal, vegetable and synthetic fibres, which may require repeated wetting and drying out before reaching a finished product.

The various textile fibres have different chemical and physical characteristics and being colloidal, hygroscopic substances, are extremely sensitive to changes in temperature and humidity conditions.

Temperature effects on the quality and character of the fibre are relative and are subject to opinion, but in general, the temperatures employed today in the various drying operations have been the result of experience with air conditions existing in a particular type of dryer, rather than the result of any basic research.

Drying technique has shown notable improvement in the diversity of types and methods and the more recent dryers have been designed for high quality of product and provided with automatic control of drying conditions, which have been carefully determined through elaborate experiments. However, in an attempt to remove the moisture quickly and at low first cost, and speed up production, many dryers are forced beyond their proper capacity for quality work, resulting in harsh, damaged or just passable goods.

FACTORS DETERMINING CHARACTER OF DRYING

In drying any substance, but especially textile fibres, the following factors must be taken into consideration: (1) Origin, characteristics and condition of the material. (2) Moisture content of the material, initial and final, and regain. (3) The time element—or time of exposure. (4) Conditions of the drying medium; i.e., dry- and wet-bulb temperature and relative or absolute humidity of the air. (5) Air velocity over or through the material, and air distribution. (6) The heat supply. (7) The removal of water vapor.

These factors in combination determine the drying rate, quality and quantity of product from any given drying unit. A study of the effect of these conditions on the fibre structure during the drying operation, wherein the textile chemist, fibre expert and drying engineer would co-operate, should be an interesting and valuable subject for research.

MOISTURE CONTENT

Moisture or water is present in textile fibres in several forms: (1) Free or excess water held mechanically in the minute channels between the fibres, having a vapor pressure equal to free water. (2) Surface moisture carried as a film or layer, and probably held by surface tension also having a vapor pressure equal to free water. (3) Water of imbibition or "soaked" moisture, which has penetrated the tissue of the fibre, essentially colloidal water which varies with the surface moisture by diffusion and has a vapor pressure less than that of free water. (4) Water of hydration which approaches combination with the substance and exerts no vapor pressure.

The amount of moisture in a material may be stated as a percentage of its original wet weight, or as a percentage of its bone-dry weight. As the bone-dry weight is a definite quantity, this basis of expressing moisture content is to be preferred to that of a percentage of its original wet weight, which varies due to the loss through evaporation.

The moisture may be removed mechanically to a limit of approximately 50 per cent of its dry weight, or by evaporation either through contact with a hot surface or by currents of heated air.

It is hoped the following subject matter will clarify the drying process and point out the significance of wet- and dry-bulb temperature and the physical laws governing the adiabatic evaporation of moisture, as encountered in atmospheric dryers, as well as the effect of drying conditions on the final product.

MECHANICS OF EVAPORATION

The wet bulb indicates the temperature of the moisture in the air. The dry bulb indicates the temperatures of the superheated vapor mixture. The difference between the two readings, known as the wet-bulb depression, being the heat head available for evaporation or the difference between their respective vapor pressures, may be termed the drying potential or driving force.

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*Paper before the Conference on Textile Drying, sponsored by the U. S. Institute for Textile Research and reported in its publication—Textile Research.

By referring to published steam tables it will be observed that the pressure of the vapor in a space saturated with water vapor increases rapidly with the increase of temperature, and also that the density of a cubic foot of saturated water vapor is a definite quantity dependent entirely upon its temperature.

When dry air and moisture are brought together at any temperature, the moisture vaporizes until the vapor pressure is that "corresponding" with the temperature; i.e., that pressure which, according to the steam table, is the pressure saturated steam at the given temperature. The mixture is then called saturated air, and the water vapor in the mixture may be considered as saturated steam at atmospheric temperature. If, however, the supply of water is insufficient for saturation, its pressure, after it is all vaporized, will be less than that which the steam tables give and the vapor or steam will be superhated. The properties of atmospheric air, therefore, are similar to those of steam. The tendency of all liquids is to pass into the vapor phase.

It is a well known fact that most liquids, if left exposed to the air in an open vessel, even at ordinary temperatures, will gradually disappear by evaporation. It has been shown that, in becoming saturated with vapor, the atmosphere cools to the wet-bulb temperature or temperature of evaporation, and the latent heat of the water or liquid evaporated is exactly equal to the loss in sensible heat of the atmosphere.

The total or atmospheric pressure (taken at 29.92 inches or 760 millimeters of mercury on the barometer, or at 14.7 pounds per square inch) is made up of the combined pressure of all the gases present, but if the total pressure is all produced by the water vapor and there is no air present, the pressure of the vapor in the enclosed space is in equilibrium with the pressure of the water in the material, and no further vaporization will occur. If some of the vapor is removed or some air introduced and the total pressure remains the same, the partial pressure will be lowered (as there is less vapor present, since the air is producing part of the pressure), and vaporization will be resumed and continued until equilibrium is again reached.

It is evident, therefore, that the rate of evaporation of free moisture from a surface is dependent upon the difference between the vapor pressure of the liquid and its partial pressure in the surrounding space, and to maintain vaporization the heat required must be continually supplied, and, in addition, the equilibrium between the vapor pressure of the liquid in the material and the vapor pressure in the surrounding media must be continually destroyed.

The liquid which is on the surface of the material will be readily evaporated; that moisture which is in the interior must diffuse to the surface before further evaporation can occur. These processes go on simultaneously but the rate of diffusion will vary with the nature and construction of the material. In some cases the controlling factor in drying is the rate of surface evaporation, while in others the rate of diffusion of the water from the interior to the surface limits the rate of evaporation, and it is essential to keep in mind the part played by each of these processes to intelligently control the drying operation.

In drying of fibrous materials, the finally fibrous structure which distributes the moisture by capillary action produces a very rapid diffusion of moisture from one point of the sheet to the other. This means it is almost impossible to remove moisture from the surface of the material without having it immediately replaced by capillary diffusion from the center of the mass to the surface.

MECHANICS OF AIR DRYING

When a gas or liquid moves over a solid surface, or when a gas moves across a liquid surface, there exists a film of the moving substance upon the surface of the stationary one in which there is practically no motion.

When air is present with the superheated water vapor, the vaporization of a particle from the surface of free water is retarded by the air pressure; or, rather, the stationary film of air in immediate contact with the moisture on the surface of the material which has diffused from the interior, becomes saturated and has a higher vapor pressure, corresponding to the temperature of the surface of the water, thus retarding the diffusion of the vapor to the outside of the film layer where it can be caught up, carried away and disseminated by convection through the mass of surrounding air.

Carrier and Lindsay have shown that the rate of evaporation from a free liquid surface increases the same amount for every 230-feet-per-minute increase in velocity of the air passing over the surface, and also that the rate of evaporation is approximately twice as great from a surface transverse to the air flow as from a surface parallel to the flow of air; and Sherwood has shown the rate to be proportionate to the 0.6 power of the velocity over a range of 120 to 900 feet per minute with parallel flow. It is apparent that the more rapidly this saturated film is removed, the faster will be the rate of evaporation.

Heated air passing over the moist surface of the material drops in temperature toward the wet-bulb temperature, inasmuch as the evaporation of the water is accompanied by a definite absorption of convedted heat. The sensible heat that is apparently lost, due to evaporation, is actually converted into latent heat and, neglecting conduction and leakage losses, the total heat of the air is unchanged during its progress through the dryer.

This heat supply must be maintained in order that evaporation may proceed, and the temperature of the material will remain substantially at the wet-bulb temperature or the temperature of evaporation so long as the moisture on the surface is evaporating freely, due to the large absorption of heat; but as soon as the moisture content of the material falls to about 20 or 15 per cent and from then on until the last traces of moisture are removed, the temperature of the material will gradually rise, approaching the dry-bulb temperature of the surrounding air, and then will correspond when the vapor pressures are in equilibrium.

In order to reduce the drying period as much as possible, and by reason of the fact that heat transmission increases with the difference in temperature which prevails between the heating medium and the material, the highest temperature that the material will stand without injury should be employed, and likewise the greatest air velocity permissible.

In most cases the air should be recirculated or used over again until a certain point of saturation is reached, whcih varies with different materials and affects the drying rate as well as the final moisture or regain. The partially saturated air should be continuously exhausted to the atmosphere in as near a saturated condition as commercial operation will permit, and an equal amount of fresh air admitted to replace that exhausted. The exhaust air should never become completely saturated, as the drying time would be increased to such an extent as to offset any economies due to saving in heat, and furthermore, in the case of fibrous materials, and on account of their hygroscopic properties, final dryness could never be expected.

Where heat is supplied by air alone, there will be a drop in temperature between the entering and effluent air, the extent depending upon the material being dried, the weight of air circulated and the type of dryer.

After absorbing the first 60 per cent of its vapor capacity, air takes up moisture very slowly to the point of saturation, and it is advisable to provide such a flow of air through the dryer as will not exceed 40 to 50 per cent of saturation as it leaves the outlet.

In the case of evaporation from a free water surface taken place at the wet-bulb temperature, but where evaporation is retarded by the moisture-holding medium, the temperature of evaporation will be somewhat higher depending upon how much the evaporation ability of the air exceeds the ability of the material to transmit water from the interior to the surface. This temperature of evaporation is difficult to measure and varies as drying progresses, so that for purposes of design it is usual to assume it at the wet-bulb temperature.

When the heat is supplied by means other than air, such a radiation or by contact with a hot surface, the wet material temperature is heated above the wet-bulb temperature. The interior vapor pressure is thus increased above that at the surface, the rate of flow of water to the surface is increased and the total drying process is faster even with lower dry-bulb and higher wet-bulb temperatures in the surrounding air than ordinarily used in atmospheric dryers.

It is obvious that when drying at temperatures under 212° the limit of the rate of drying is the rate of evaporation and moisture pick-up from the surface of the material being dried. Above 212° the vapor pressure is a total pressure and susceptible to greater range of drying speed.

Critical Temperatures Defined

Warm moist air is not only better for many substances than dry hot air, but dries them faster. The action of moist heat is less severe, due to the lower drying potential. and in some cases actually improves the product, whereas the same dry bulb with a lower wet-bulb temperature may have harmful effect.

It has been found that, under certain conditions, materials which were considered to have a critical temperature below 200° have been successfully dried at considerably higher temperatures and in a much shorter time.

In general, those materials which dry quite rapidly may be subjected to much higher dry-bulb temperatures than those requiring a longer drying time due to the slower moisture diffusion rate.

Where the critical temperature of the material will allow it, high temperatures speed up drying, both by virtue of more rapid heat penetration of the material being dried and (when combined with rapid circulation of the air carrying the heat) by removing the vapor film from the surface of the material and so facilitating the loss of vapor from the material by vapor tension difference.

The drying process does not proceed at a uniform rate. Usually the first 80 per cent of the moisture can be removed in ¼ to 1/5 of the total drying time; the hard work begins when the last traces of moisture are to be removed; i.e., when the material is wanted in a bone-dry state.

Under constant drying conditions, as long as the surface of the material has surplus moisture the rate of drying continues "constant" down to some definite water or critical moisture content (which in most textile fibres is around 33 per cent) with no harmful rise in temperature, and then the drying rate begins to fall or decrease with the capillary diffusion of the moisture, diminishing as dryness is approached with a corresponding increase in material temperature, the ultimate value depending upon the air conditions.

In case the wet material is initially at some temperature other than the equilibrium temperature prevailing during the "constant rate" period, an adjustment period occurs during which the material is warmed or cooled to the equilibrium temperature.

The harmful effect of temperature on the finish or physical structure of a fibrous material is a function of time of exposure. Wet pulp sheets have been subjected to a temperature of 1900° F. without injury until a certain moisture content was reached (around 80 per cent). Dry cotton cloth is singed without damage if travelling at high speed over a gas flame. The "hand" of silk fabrics is said to be improved by a quick and short exposure to the radiant energy of gas flame while containing surplus moisture. One plant is drying rayon fabrics by using the products of combustion from an oil burner at high temperatures without apparent injury. Cotton goods are dried in a superheated vapor, approaching 300° F., and tests have indicated that the various textile fibres with normal regain do not scorch when in contact with a hot-iron surface for a period of five seconds, where the temperature does not exceed 350° F.

It has been shown that the mechanics of the drying process are fully understood, and it is evident that machine output can be increased without material detriment to the fibres by utilizing higher temperatures while rapid evaporation prevents overheating until the critical moisture is reached, and then removing the diffusion moisture in a properly conditioned atmosphere to maintain the natural characteristics and proper "hand" of the finished product.

Notes On Cotton Warp Sizing

By Ralph Hart

Hart Products Corporation

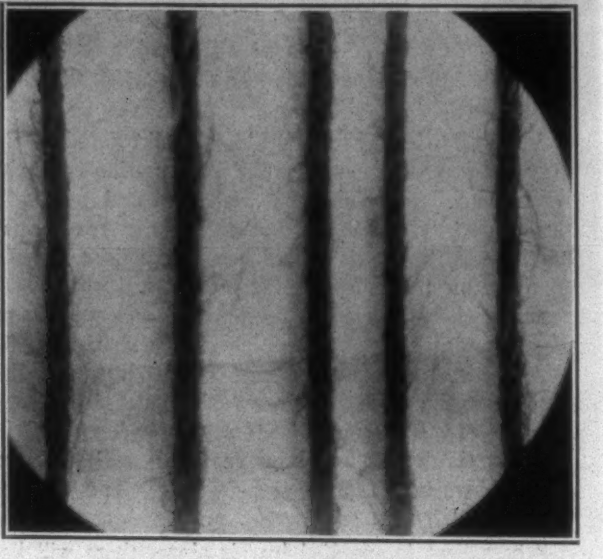
Second of A Series of Articles on This Important Subject

(*Continued from last week*)

Locust Bean Gum.—On boiling with water, locust bean or kernel gum gives a viscous neutral solution which may be used in sizing in combination with starch. Weak organic acids have little or no effect on the solution but mineral acids lower the viscosity. Alkalies getatinize the endosperm gel to a transparent mass. Salts which have no alkaline reaction mix well with it. Salts which tend to dissociate on dilution in excess cause flocculation. One part of this gum is said to be equivalent to seven parts of starch. It is also stated that this gum gives a smooth, transparent, tough, and non-sacly film of exceptionally good binding power and with little tendency to chafe or mildew. The amount usually used in sizing is between ¼ to ¾% on the weight of the starch.

STARCH PASTES

Nature of Starch Paste.—Most investigators now believe that as starch granules are heated in water to form a paste they swell but do not ordinarily disintegrate or become disrupted. Starch pastes, immediately upon gelatinizing, are not true colloidal solutions but are suspensions of swollen granules. Potato starch presents an exceptional behavior in that the granules when heated in water not only swell but readily fragmentize and disintegrate.



Yarn from North Carolina Mill Before Slashing and Polishing

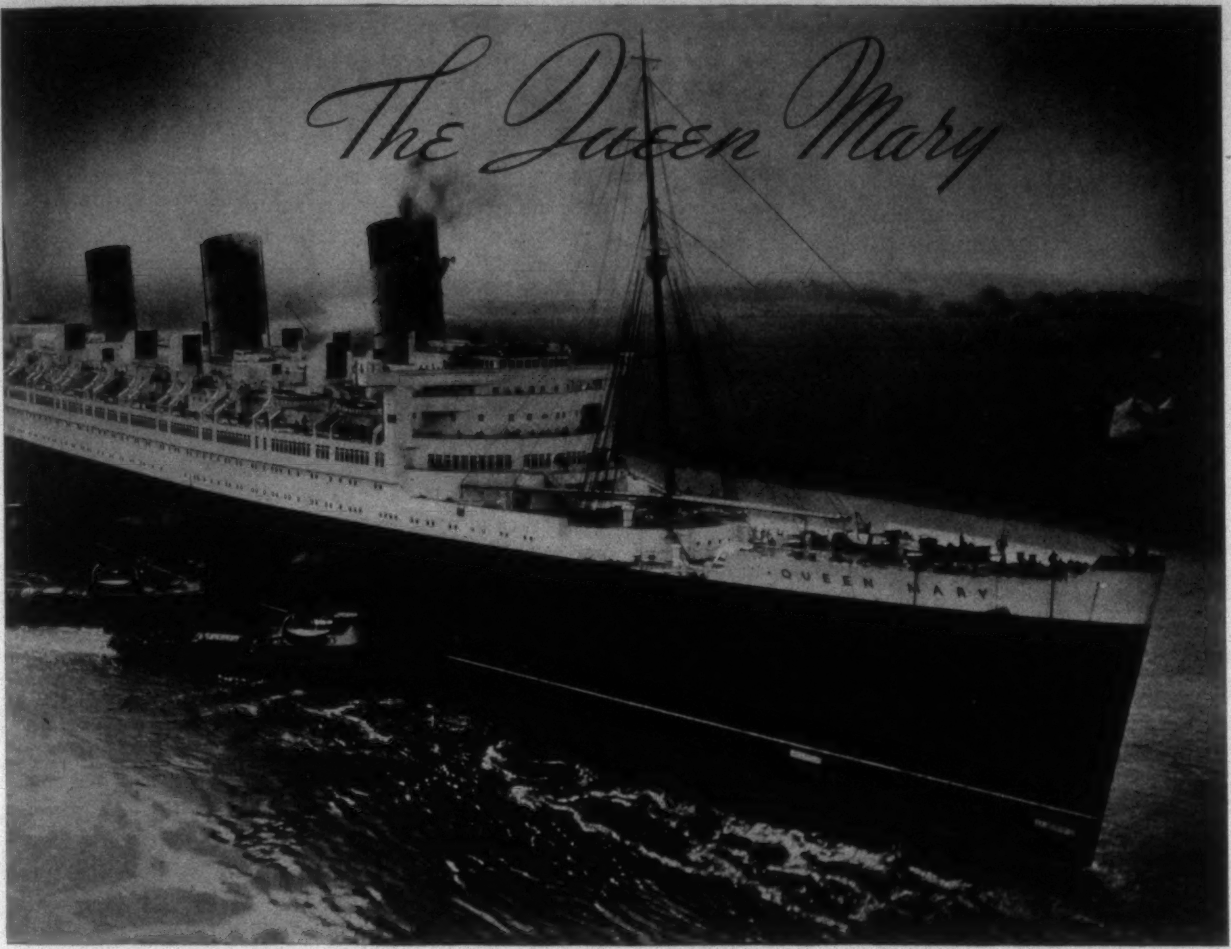
Starch pastes, unless they have been severely boiled or otherwise treated to disintegrate the suspended particles, have the appearance of clear swollen granules, filled with a colloidal solution of starch. The intact starch granule does not swell much in the cold because its rigidity restrains it. Upon heating with water, there is a marked swelling of the starch granule due to the absorption of water. The main effect of heat is to make the granules' structure less rigid and more distensible, and to accelerate the swelling. The granules have a balloon-like appearance and the diameter increases to somewhere between 50 to 100 microns (uncooked granule from 12 to 18 microns). A few of the granules, due to some weakness in their structure, will burst and present an opening on their sides from which, due to internal pressure, the amylose in colloidal solution is erupted. The majority of the granules, however, will remain intact. The viscosity of the paste is caused by each of the large swollen granules having a large amount of its surface in contact with its neieghbors. What we have is a number of balloon-like granules all touching each other which, because of their large diameters, have necessarily large open spaces between them—these spaces being filled with water or colloidally-dispersed starch solution.

Upon long continued boiling and agitation of potato starch-paste, the envelope around the granule breaks down completely and seems to dissolve in the solution, whereas with thick-boiling corn starch the envelope breaks open but remains in the liquid as a shell. The viscosity of the boiled starch-paste is controlled to a great extent by the size of these broken-down amylopectin shells. Thin-boiling corn starches behave in this respect like potato starch.

Gelatinization and Viscosity.—A mixture of starch and water upon heating sets to an apparent gel, the viscosity of which increases with temperature to a maximum and then decreases upon continued boiling. It is stated that the larger starch granules begin swelling at a lower temperature than the smaller ones and that the swelling of the smaller granules is a slower process. It has been definitely shown that for a given starch there is no well-defined pasting temperature but rather a temperature zone of paste formation. The viscosity of a starch paste is akin to that of a suspension rather than that of a colloidal solution like a gelatin solution. The drop in viscosity on continued heating or stirring is attributed to the breakdown of the swollen granules and the disintegration of the sacs. It is stated that, in general, the viscosity of a starch-paste for satisfactory sizing purposes should be thin enough to give satisfactory penetration and thick enough to take up the proper amount of size.

Corn Starch Paste.—The viscosity of corn starch-paste decreases only slightly from its maximum upon continued boiling and agitation. One researcher reports that corn starch-paste begins to gelatinize at 83° C. and that there is a gradual increase in viscosity with temperature. On

(*Continued on Page 10*)



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The Textile Strikes

(Gaffney Ledger)

SOME of the textile strikers seem perplexed, and somewhat hurt, because they have not found public sentiment supporting the shutdown of the mills here.

There are several reasons for the attitude of the public.

Everyone wants to see textile workers receive good wages and enjoy reasonable working conditions. The more workers in general make, the better it will be for business. That is a powerful factor in the growth and development of any community.

You can not tread on a man's toes and have him like it. Neither man you hit his pocketbook, even indirectly, and have him feel kindlier towards you.

Cherkoee County people see an actual loss in money of $100,000 per month while the mills are idle. That is a big sum for a small county like this, and it is bound to affect the income of every person in Cherokee. Business establishments here and in Blacksburg will feel the loss most severely, but others will not escape.

Strikers may consider this a selfish viewpoint, and perhaps it is. Nevertheless, it is one of the reasons why citizens generally are not hurrahing for strikers.

Another thought which comes to the minds of others is this: textile operatives have a 40-hour work week, which is shorter by many hours than almost any other class of workers enjoys. There is hardly a clerk in any store who works less than 60 hours a week, some several hours more, and many do not make a cent more than textile operatives. In fact, numbers are paid less. It is hard for these folk to sympathize with persons who one expected to work only 40 hours.

Citizens not engaged in the textile industry know little about cotton mills, but many do not believe the managements of Gaffney's plants are attempting to give their employees more to do than is comparable with work assignments in other mills with similar equipment and producing the same grade of cloth. As a matter of fact, reports say the work assignments are in effect in mills at other places.

Right here at home may be found plenty of experienced textile workers who say they are willing to handle the assignments prescribed by the management. When the Alma Mills was closed by a strike in February, enough workers to operate at least one shift signed a petition asking for protection in their right to continue to earn a living for themselves and their families. That petition was disregarded, and these people have been forced to subsist as best they could since then.

People who are working six days a week to earn their own bread and meat naturally do not look with approval on one group preventing another from exercising the same privilege.

The majority of the people in Gaffney and Cherokee County still believe that the man who wants to wark has an inalienable right to work—and that no group, whether organized or unorganized, has any right to stand with shotguns, pistols and clubs to prevent him.

That is another reason the public is not in sympathy with the strikers here. A group of pickets sitting about a mill gate with a shotgun leaning against the fence within arm's reach is not considered a very peaceable picture by most people. In reality, it is nothing short of an open threat.

Of course, anyone knows that an attempted strike that does not shut down a plant is a failure. But that gives no one the right to use illegal force to gain his end, however desirable that end may be.

The person who tramples on the law to accomplish his own purposes may some day find he has destroyed his own means of protection.

The net results of the strikes here so far are that more than 1,500 workers are idle at a time when the national administration has been bending every energy to reduce unemployment, and some several thousand persons have been thrown on the relief agency for support.

The prospects of the strikers winning any worthwhile concession, on the face of the situation, must be dim indeed.

One of the mills involved is an affiliate of a group composed of some six or eight more which are running every day. Any orders received certainly can be filled by some of the others. Under the circumstances, the controlling interests may be very well satisfied for one of the plants to remain closed through the summer, when cotton mills generally curtail operations anyway.

The management of the other mills has stated plainly that none of its plants will operate except on a comparable work assignment basis. An offer was made to the Alma Mills strikers two months ago to permit the strikers to select five mills and the management choose five, the ten to be added together and the work averaged. This average would be the work assignment for the plant. To an outsider, that appears to have been a fair proposition. But it was rejected.

As matters now stand, five Cherokee County mills are closed. These mills are eliminated from the market so far as competing in the sale of cloth is concerned, and the work which would be going on here under other circumstances is being done by others in other communities. The shutdown of the Gaffney plants probably will give a few days extra work during the summer to operatives in other mills elsewhere.

The textile unions are fighting to prevent the abolition of jobs. The members know every time a rearrangement of work is put into effect, some jobs have been done away with forever. It is unfortunate, of course, but the same thing has happened in many other industries. For instance, the introduction of the linotype machine practically eliminated the hand typesetter in the printing business. Automatic printers caused thousands of telegraph operators to lose their jobs. Steam shovels and other machinery replaced innumerable laborers. That is the history of progress all along the line, and the textile industry is not likely to be an exception.

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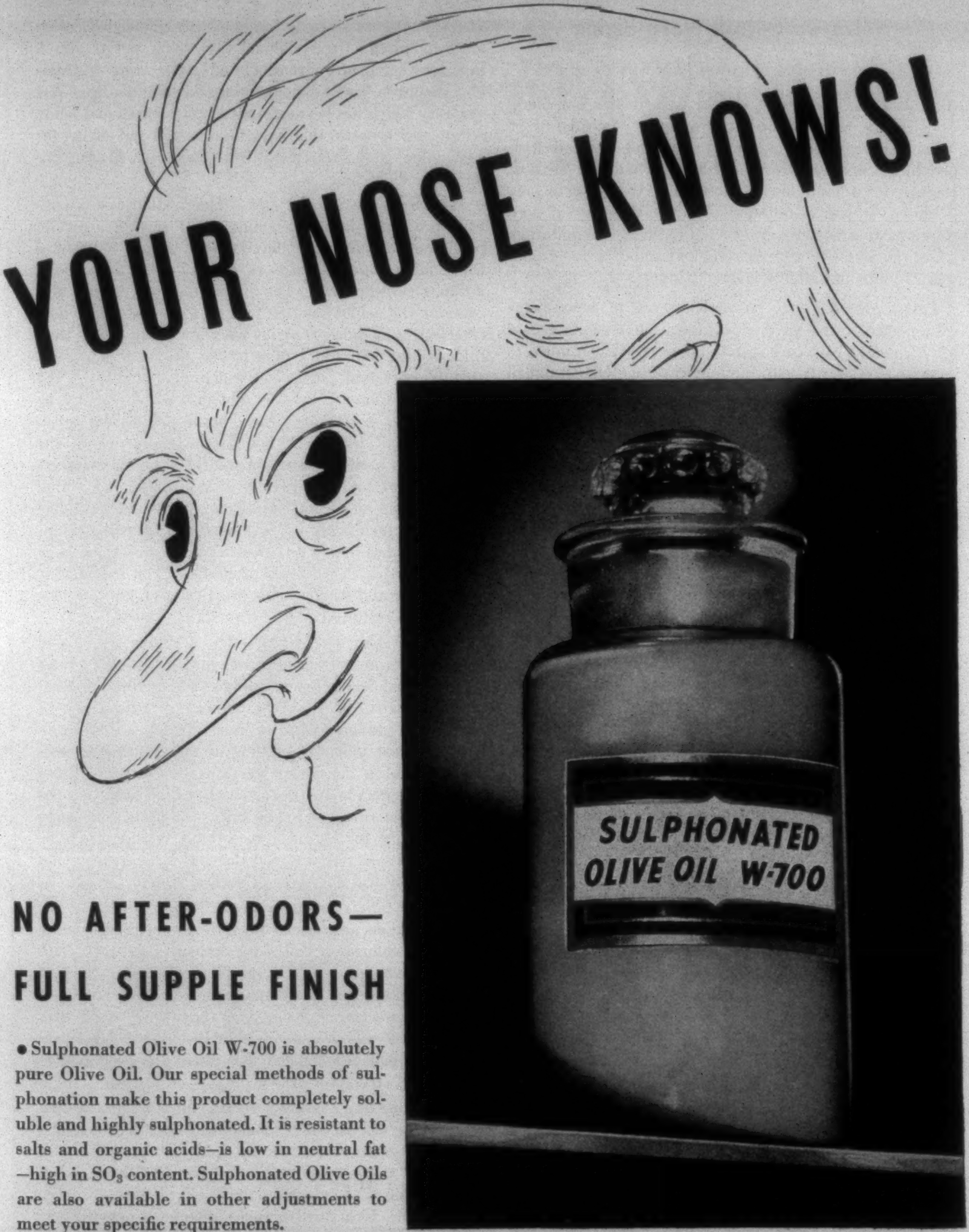

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Notes On Cotton-Warp Sizing

(*Continued from Page 6*)

continued heating at 99° C., the paste under the conditions of the tests reached its maximum viscosity of 76 units (initial viscosity 37 units) in 30 minutes and dropped to a viscosity of 69 units after 2 hours of heating. Heating for 4 hours longer caused a further drop of only 2 units. It was also found that the viscosity of corn starch-paste is not greatly affected by moderate agitation. Thus, the viscosity after heating and agitating for 1 hour was 73 units and after 4 hours 71 units.

Potato Starch Paste.—A similar series of experiments with potato starch gave a gelatinization temperature of 61° C. and, as with corn starch, the viscosity continued to increase temporarily with the temperature. On continued heating at 99° C., it reached its maximum viscosity of nearly 13,000 units in 20 minutes (initial viscosity 37 units). The viscosity of the potato starch-paste decreased rapidly when the paste was heated and agitated. After two hours, under the conditions of the experiment the viscosity became fairly constant (at only about 1 per cent of its maximum) and was not much greater than that of corn or sweet potato starch-pastes. A series of laboratory experiments has shown that the viscosity of potato starch size in the size-box is very much less than its viscosity in the size kettle, due no doubt to the agitation it receives while being pumped from the cooking or storage kettles. The effect of stirring on the viscosity of potato starch-paste seems to be even greater than that of temperature. It is reported that the viscosity of a potato starch-paste of a certain concentration was reduced from 250 to 50 by only one minute of shaking at 16° C., and to 20 by the same shaking at 90° C.

Sweet Potato Starch Paste.—This starch was found to gelatinize at a temperature of 67° C. and to reach its viscosity of 188 units in 30 minutes (initial viscosity 37 units). On continued heating at 99° C., the viscosity dropped to 149 units after two hours, and to 91 units after six hours. Like corn starch-paste, the viscosity of sweet potato starch-paste is not greatly affected by moderate agitation. It is claimed that sweet potato starch possesses satisfactory coating and penetrating qualities and should be well adapted for use in textile sizing. Its viscosity which lies between that of corn starch and white potato starch-pastes that have been heated and stirred for some time, shows relatively little change on heating for long periods of time.

Yarn from North Carolina Mill
After Slashing and Polishing

Modified Corn Starch Paste.—The modification or conversion of thick into thin-boiling starch renders a certain portion of the starch granule soluble in water. A paste of thin-boiling starch consists of ultramicroscopic particles intimately dispersed in the liquid medium, which also contains the soluble matter formed from the conversion. One reason modified starches have lower viscosities than thick-boiling starches is due to the presence of greater amount of soluble materials which do not add to the viscosity. Another reason is that instead of swelling, as thick-boiling starch does, the granules crack and break up into small fragments, due to the weakening of the amylopectin shells. They apparently flake off in layers similar to taking off the layers of skin on an onion and, if the heating and agitation is continued, these flake-like particles in turn break up into smaller fragments. Thin-boiling starches should be boiled for at least 30 minutes in order to break them down properly. It is stated that temperature and stirring have practically no effect on the viscosity of certain modified corn starch-pastes.

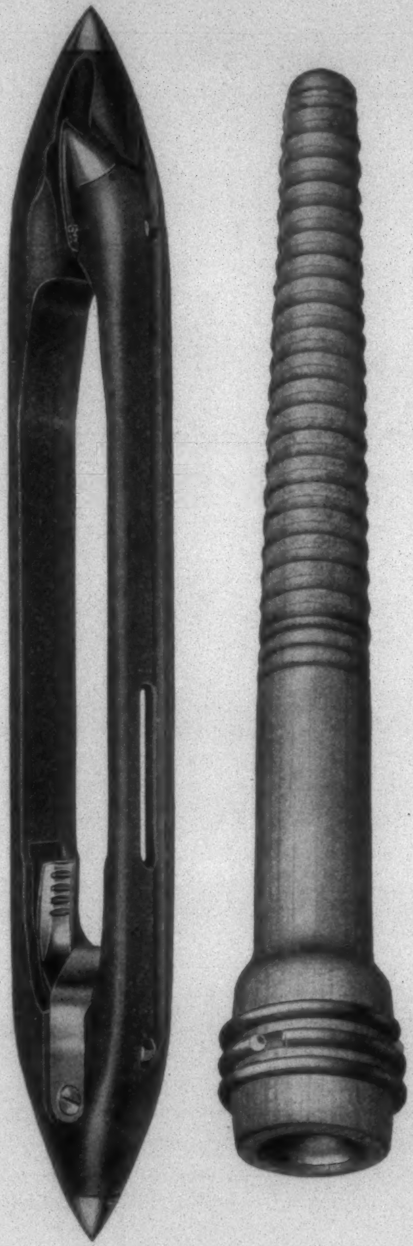
Effect of Acid and Alkali.—The addition of acids to starch-pastes in concentrations as low as 0.0025N causes a pronounced decrease in viscosity. The addition of alkalies causes a rise in viscosity followed by a decrease. A solution of sodium hydroxide is essentially a starch-gelantizing agent inducing swelling of the granules at temperatures below the normal gelatinization range in water alone; this effect being proportional (within limits) to the concentration of alkali. The cells of a paste containing sodium hydroxide are more susceptible to rupture—i. e., more fragile—accounting for the lower consistency and different physical character of such a paste.

Effect of Calcium Chloride.—Extremely thick and adhesive solutions are formed when a concentrated solution of calcium chloride is boiled for three or four hours with starch, converting it into a soluble form. The effect of calcium chloride on starch-paste is so great that no syneresis (sweating of water from the gel) occurred after 60 days, if it was present in as little as 0.5M concentration. It is believed that this salt causes the formation of a firmer gel structure.

Penetrating and coating properties of starch-pastes depend on the viscosity and temperature of the pastes, and upon the pressure exerted on the sized yarn by the squeeze rolls. The viscosity of the starch-paste is determined in a general way by the size of the swollen starch-granules. Starch-pastes with small granules give good penetration; on the other hand, those with large granules possess good coating properties. The penetrating power of starches seems to follow the order of rice, wheat, corn, and potato, with potato starch showing the least penetration. Potato starch also does not seem to adhere well to cotton yarn and scarcely coats at all, probably due to the fact that the swollen granules are very large. They are too large to

(*Continued on Page 24*)

RECOGNIZED AS STANDARD BY COTTON MILLS EVERYWHERE



THE Automatic Loom Bobbin and Automatic Loom Shuttle, developed originally by the U S Bobbin and Shuttle Company, have for many years set the standard for efficiency and dependability in cotton mills from Maine to Florida.

For faster, more economical weaving in your mill, be sure to specify U S products. Our three Southern plants are at your service for prompt delivery of quality products.

U S BOBBIN & SHUTTLE CO.

Monticello, Georgia

Offices: Charlotte, N. C., Greenville, S. C.,
Johnson City, Tenn., Manchester, N. H.

BETTER BOBBINS • SPOOLS • CONES • SHUTTLES

Record Attendance Expected At Southern Textile Association Convention

THERE is every indication that the attendance at the twenty-eighth annual convention of the Southern Textile Association, Blowing Rock, N. C., June 19th and 20, will be the largest in the history of the organization.

Approximately 250 members and guests had made hotel reservations through last week-end, two weeks before the meeting, the largest advance reservation on record. Many more are expected to attend.

While it appears that Mayview Manor, the convention hotel, will not be able to accommodate all of the Association guests, there are ample rooms available in the other hotels and cottages. Those who have not already made reservations should write at once to Mayview Manor and, if necessary, such requests will be referred to the Green Park or other hotels so that rooms can be booked in advance.

THE PROGRAM

The program for the convention is considered one of the strongest arranged in many years.

The annual dinner of the Associate Members Division will be held on the evening of Thursday, June 18th. W. B. Uhler, of Spartanburg, chairman of the Division, will act as toastmaster. Edwin Howard, of Greenville, is vice-chairman, and Junius M. Smith, of Charlotte, is secretary. The dinner program will be devoted largely to entertainment, with a floor show as the principal feature. Officers of the Association and the convention speakers will be honor guests at this dinner.

Ladies in attendance will have an opportunity to draw for several attendance prizes.

OPENING SESSION

The convention will be formally opened on Friday, June 19th, at 10 o'clock. After the opening formalities John A. McFalls, of Rockingham, will deliver the annual address of the president.

Mr. McFalls will be followed by Donald Comer, president of Avondale Mills and newly-elected president of the American Cotton Manufacturers' Association. Mr. Comer is recognized as one of the leaders of the textile industry in this country.

Robert R. West, president of the Riverside and Dan River Mills, and one of the best known mill executives in the South, will speak at the conclusion of Mr. Comer's address. Mr. West, aside from his prominence in the industry, is also known as a speaker of force and ability.

GOLF TOURNAMENT

The convention will not be in session on Friday afternoon. The time will be devoted to the annual golf tournament and other recreation, including a visit to the nearby Cone estate.

Handsome prizes will be awarded for the winners in the golf tournament. There are large cups for first prizes among both the active members and the associate members and pretty trophies for those finishing in second and third places. The golf course is expected to be in fine condition for the tournament and a large entry list is assured.

THE BANQUET

The twenty-eighth annual banquet will be held Friday evening at 7:30, with President McFalls as toastmaster. One of the features will be the drawing of attendance prizes by the ladies attending the convention.

Golf prizes will also be presented during the banquet session. There will be an unusual entertainment feature just prior to adjournment and dancing will start immediately after the banquet is ended.

TWO CONVENTION SPEAKERS

Donald Comer (left), president of the American Cotton Manufacturers' Association, and Dr. Claudius T. Murchison, president of the Cotton-Textile Institute, who will speak at the coming convention of the Southern Textile Association.

SATURDAY MORNING

The final session of the convention will be held on the morning of June 20th. The feature speaker will be Dr. Claudius T. Murchison, president of the Cotton-Textile Institute. He is expected to have a message of unusual interest for the Association members.

The convention will come to a close after the regular business session, including the election of new officers.

Viscose Reduces Fibro Prices

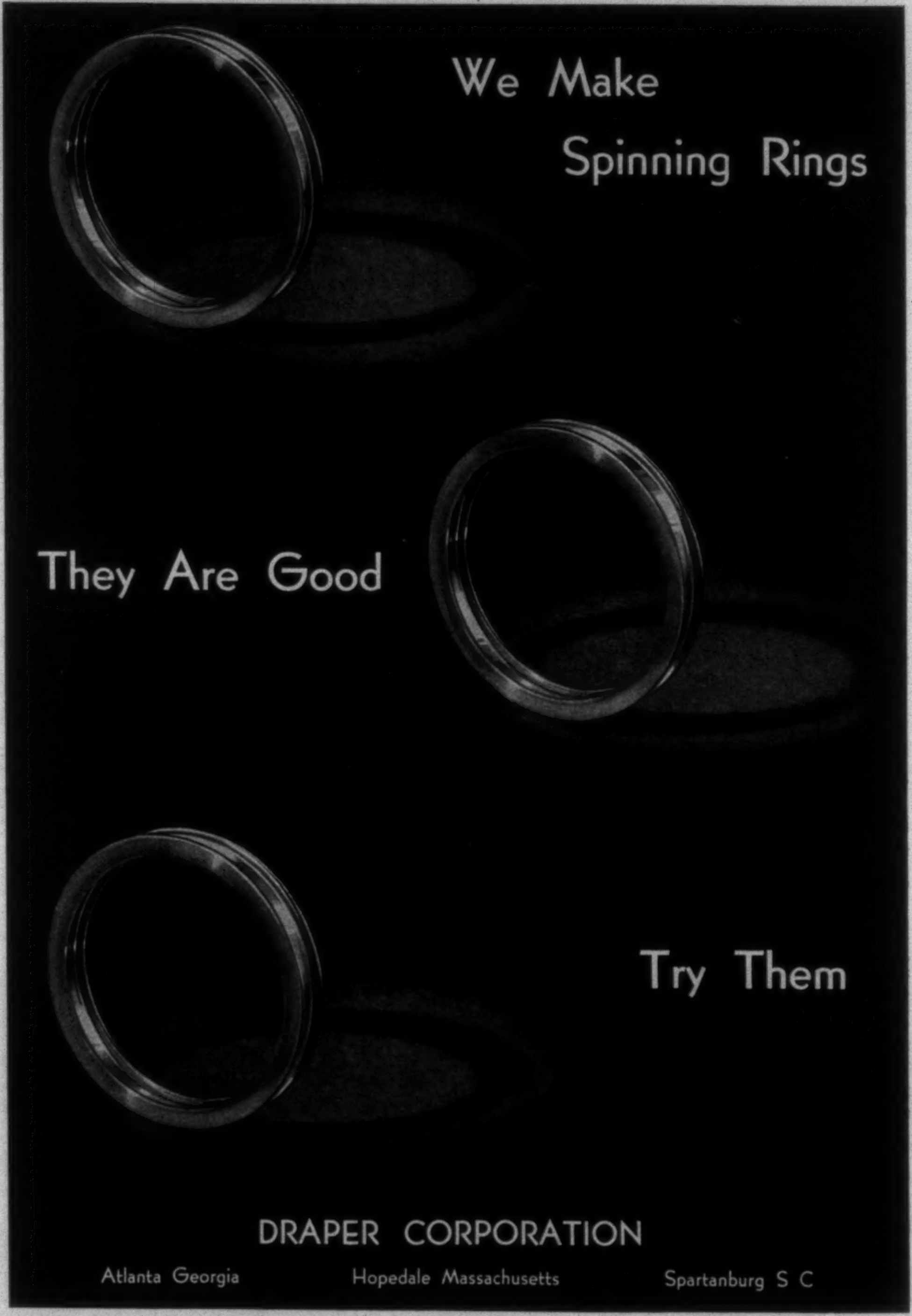
The Viscose Company has met the reduction in staple fiber prices initiated by the du Pont Rayon Company, by revising its quotations for Fibro. At the same time the company announced that the quantity discount had been discontinued and that the prices were f. o. b. its mills with no freight allowed.

The company's statement follows:

"Prices of our Fibro (cut staple) have been revised as follows:

"Bright, all lengths and deniers, 28c per pound.

"Chalkelle, all lengths and deniers, 30c per pound.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Spinning Rings
They Are Good
Try Them
DRAPER CORPORATION
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Personal News

F. C. Fowler has been promoted from overseer weaving, second shift, to overseer weaving, first shift, at the Chadwick-Hoskins Mill No. 1, Charlotte, N. C.

Frank Gurley has become overseer of carding at the Fitzgerald Cotton Mills, Fitzgerald, Ga.

A. R. Gregg has resigned as overseer weaving at the Chadwick-Hoskins Mills No. 1, Charlotte, N. C.

Charles Caplin, for 13 years with Stehli Silks Corporation in the credit department, has resigned and joined the credit department of John P. McGuire & Co., New York factors.

Howard E. Coffin, chairman of the board of Southeastern Cottons, Inc., has been elected chairman of the board of Young Management Corporation, an investment advisory organization.

William A. Rhinehardt, a graduate of the Textile School, Clemson College, S. C., and a son of J. L. Rhinehardt, of Anderson, S. C., has accepted a position with the Carolina Cotton and Woolen Mills, Spray, N. C.

E. J. Lees, formerly with the Lees-Bradner Company, has been appointed chief engineer in charge of engineering and research for the National Tool Company of Cleveland, Ohio. He is widely known as an engineer, designer and inventor in the machine tool industries.

L. G. Hardeman, president of the Harmony Grove Mills, Commerce, Ga., has made a gift of $10,000 to Mercer University, at Macon. The fund will be used to improve the library, which is to be named in honor of his mother.

Rufus E. Bowland, who has served with the Du Pont companies in different capacities and at different plants for 25 years, and who is now an official at Old Hickory, has been awarded the 25-year service pin. This pin is ornamented with four diamonds. He is the second Old Hickory Du Pont man to ever receive a 25-year pin, the other being James T. Cook, who has since been transferred.

L. E. Wooten, of Charlotte, has been appointed Southern representative for Knowlton & Newton Co., Inc., Lowll, Mass. The company manufactures return air condensers for picker and napper rooms, dust collecting system, slasher exhaust systems, dry can machinery, color kettles and other equipment.

In addition to his connection, Mr. Wooten will continue as Southern representative for Lestershire Spool and Manufacturing Company, T. C. Entwistle Company, Mitchell-Bissell Company, and other well known manufacturers.

Carolina Specialty To Represent Rochester Engineering & Centrifugal Corp.

Carolina Specialty Company, Charlotte, has completed arrangements for representing the Rochester Engineering & Centrifugal Corp. in the South on their lines of machinery for textile plants.

The Rochester Engineering & Centrifugal Corp. is a division of the American Laundry Machinery Company and manufactures the well-known super-hosiery dyeing machines, hydro-extractors, silk soaking machines, sheet and pillow case finishing machines and the Economy automatic folders for towels, pillow cases and other flat work.

An elaborate entertainment program has been arranged for the Annual Dinner of the Associate Members Division of the Southern Textile Association. The dinner will be held at Mayview Manor, Blowing Rock, N. C., on the evening of June 18th and precedes the formal opening of the Twenty-eighth Annual Convention of the Southern Textile Association June 19th.

One of the features of the dinner program will be a floor show. The picture above shows five of the Ritz-Carleton Blondes who will have a prominent part in the entertainment.

Fall Hosiery Hues Lighter

Ten colors, consisting of eight new and two repeated shades, are featured in the confidential advance issue of the 1936 fall hosiery card just released by the Textile Color Card Association to its members. These tones are in general of lighter register than last fall. Because of their continued fashion importance and their success during the past season, burnt ochre and burnt copper are repeated for fall.

This advance card is issued in the same practical book form as inaugurated last season, with a large swatch of each color on a separate page and complete co-ordination notes applying to each shade.

The 1936 colors are: Burnt ochre, a radiant sun tone; burnt copper, a glowing copper; leather tan, a rich golden tan; cinnamon brown, a lively spicy brown; cafe clair, a vicacious light brown; tailleur brown, a brown of metallic cast; debonair, a smart animated beige; jaunty, a neutral beige; saunter, a subdued beige of neutral cast, and smoketone, a medium gray of taupe cast.

Cotton Shipments Increase

Forwardings of American cotton to mills of the world continue to run well ahead of last season, reflecting the fact that the American staple is going into world consumption at a much higher rate than a year ago, according to the New York Cotton Exchange Service. Forwardings are running much larger than last season to all important divisions of the world spinning industry except the Orient. In the Orient, they have declined, partly because of adverse conditions in the spinning industry of Japan and partly because China is using more of its own cotton.

"During this season to date, the mills of the world have taken 10,879,000 bales of the American staple, compared with only 9,066,000 in the same period last season, an increase of 1,813,000 bales," says the Exchange Service. "This increase is substantially greater than the increase in world consumption of American cotton from last season to this season, world consumption of American cotton during this season to date probably being only about 1,100,000 to 1,200,000 bales more than in the same period last season. The greater increase in forwardings than in actual consumption is due to the fact that while last season world mills reduced their stocks of American cotton as they curtailed their consumption of it, this year they have increased their stocks with their increased consumption of the American staple.

"By far the largest increase in forwardings has been to the mills of this country. Domestic mills have taken during this season to date 5,468,000 bales, compared with 4,290,000 to the same date last season, an increase of 1,178,000 bales."

Cotton Week Best Ever

Measured in terms of cotton goods sales and of its stimulus to a selling season prolonged well into August, National Cotton Week was probably, according to the Cotton-Textile Institute, the most successful in the six-year history of the event.

Preliminary reports to the Institute show that ideal cotton weather prevailed generally throughout the country during most of the week to combine with the extensive newspaper advertising, show window and store interior promotions of cottons by more than 40,000 retail establishments.

Evidence of the results, in consumer response, is the following excerpt from the report to the Institute by the Namm store, Brooklyn, that Monday, the opening day of Cotton Week, was the best single day for cottons of all kinds in the history of the store. In the cotton piece goods department alone, there were more than 1,600 sales transactions, with the dollar volume in the department the best since the first Cotton Week observance in 1931.

OBITUARY

GEORGE W. RAGAN

Gastonia, N. C.—George Washington Ragan, one of the pioneer cotton manufacturers of Gaston County, died here Tuesday afternoon at the age of 89. He had long been one of the most prominent men in this section, having begun his career as a merchant and banker shortly after the close of the Civil War, in which he served.

In 1892, Mr. Ragan, with George A. Gray, L. L. Jenkins and others, built the Trenton Cotton Mills. In 1899 he sold his interest in that plant and built the Armington Mills. In 1912 he sold Armington. In 1923 he built the Ragan Spinning Company, of which he was president at the time of his death and which is managed by his sons, George W. Jr., and Caldwell Ragan.

He was prominently identified with religious, civic and educational affairs, having served as mayor of Gastonia and having made substantial gifts to Davidson College and Oglethorpe University.

Funeral services were held Thursday morning.

Clinton, S. C.—Lydia Cotton Mills are having their slasher cylinders re-covered and reground by The Textile Shop, of Spartanburg, S. C.

GREEN PARK HOTEL
BLOWING ROCK, N. C.
Open June 18th to October 1st

Rates $4 to $6 per person with meals. Delightful social environment, excellent food, selected clientele. Hotel situated between first tee and eighteenth green of Blowing Rock's only golf course.

TENNIS — FISHING — DANCING — BRIDGE

Early Reservations Suggested
Wire or Write

WILLIAM J. TOBIN, *Manager*

Faults To Avoid In Hosiery Yarns*

KNITTED fabric is peculiarly susceptible to yarn faults. Owing to its method of construction each loop is supported by one or more preceding loops whilst each lateral row of loops, termed a course, is usually produced from one yarn. The threads are not crowded together as in weaving and such a method of construction can, and in most cases does, emphasize any visible faults in the yarn.

Examination of copies of your *Annual Journal* have only intensified these, for I find, in the records of discussions, such statements as "leave your spinning to Lancashire and don't let it be done by Leicester operatives." I assure you that it is not my intention in any way to treat the subject of the lecture from this angle, but rather to try and introduce to you the hosiery manufacturer's point of view, whilst at the same time appreciating the difficulties of the spinner.

Knitted fabric is peculiarly susceptible to yarn faults. Owing to its method of construction each loop is supported by one or more preceding loops whilst each lateral row of loops, termed a course, is usually produced from one yarn. The threads are not crowded together as in weaving and such a method of construction can, and in most cases does, emphasize any visible faults in the yarn.

The bending of the yarn during knitting combined with the meshing of the loops test the yarn severely, and it must be remembered that cuts and holes are much easier to produce in knitting than in weaving, and that the mending of these is a difficult matter.

General Properties Desirable

It is not, I think, an exaggeration to say that there is no such thing as a perfect hosiery yarn, inasmuch as the standard by which any yarn is judged must necessarily be that of the special requirements of the manufacturer. In view of this statement I propose to divide what one may term the desirable properties of a knitting yarn into two groups—those which are general to all types of knitting yarn, and those which apply to special yarns for particular trades. In the first group we must place such properties as:

Uniformity.—Although I have not attempted to list these properties in order of importance, I think that most knitters would agree that uniformity is the most important of them all.

Uniformity is not only required in yarn count but also in the admixture of the fibres, in twist, in true elasticity and in strength—all of which factors will be dealt with later from the fault point of view. The importance of uniformity may be realized from the fact that knitting a piece of fabric is one of the recognized methods of discovering irregularities in yarn.

Covering Properties.—"Cover" is a factor of vital importance in the knitting trade—associated as it is with "quality" which, broadly speaking, is the relation between cover and weight. The structure of all looped fabrics is such that any increase in the covering property of the yarn which enables a better texture to be produced without increasing the fabric weight is a decided advantage. Much of the covering power of a yarn used for knitting depends on the fibres used and the actual spinning operations; soft spun yarns naturally cover better than hard spun yarns of similar count, whilst folded yarns, provided the correct folded twist is employed, cover better than single yarns of the same count.

Twist.—The importance of correct twist in hosiery yarns cannot be over emphasized. It must be observed that only 25 per cent of the space occupied by the looping elements on a knitting machine is available for the yarn, and it is therefore invariably flattened in the knitting process. Hence the necessity for minimum twist in the singles and the preferable use of doubled yarns. Irregular and incorrect twist may, however, give rise to many troubles, some of which I propose to deal with later.

Plasticity.—The ideal knitting yarn should be capable of receiving sharp bends without having any tendency to cut. Indeed, it should be capable of being knitted up, unroved, and knitted up again. When formed into loops it should remain in a loop-like form after the looping elements have been removed. Unfortunately, many otherwise excellent yarns for knitting are resilient to a high degree, and in such cases resort is made to some form of lubrication. Dyed yarns, however, if not subsequently scoured, must not be lubricated, and in any case if it is possible to knit yarns without lubrication a clear cost advantage is gained.

Elasticity.—Yarns for the hosiery trade should possess true elasticity, i.e., they should be capable of being stretched and recover without becoming permanently elongated or strained. The property of elasticity is highly important, as it often avoids cuts in the knitting process while if the yarn is permanently stretched thin places will be observed—an undesirable state of affairs which may result in holes when the fabric is finished.

Cleanliness.—This is often of more importance for its effect on the mechanical action of knitting than on the subsequent appearance of the fabric. It has been pointed out that during knitting, the yarn is subject to severe mechanical strain, and it will therefore be understood that the presence of any extra neous particles, such as bits of seed or burr, will have the effect of increasing this strain. It must also be noted that during knitting the yarn passes from the yarn package to the knitting point at a very high relative speed—up to 400 ft. per minute and that during this passage it must pass over various guides and through at least one small orifice—the feeder. All these guides and the feeder present obstacles which at this high speed quickly become clogged and offer obstruction to the yarn if a "dirty" yarn is being worked.

The finer the gauge of the machine the more important becomes the danger from extraneous particles. Bearing in mind the previous statement that only 25 per cent of the space occupied by the looping elements is available for the yarn it will be apparent that the inclusion in the yarn of hard particles, however small, invites damage to the delicate looping elements.

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*In a lecture to the British Association of Managers of Textile Works.

PROPERTIES FOR SPECIAL PURPOSES

These primary properties may be taken as being essential to a good hosiery yarn, but in addition there are various secondary properties, the relative importance of which is dependent on the purpose for which the yarn is intended. Amongst these may be included such properties as:

Lustre.—Lustrous yarns are of special interest to manufacturers of certain types of garment and although modern tendencies do not approve of excessive lustres, a good "bright" yarn always enhances the beauty of a knitted fabric.

Hygroscopicity.—This is one of the most valued properties of a knitting yarn intended for underwear manufacture, and is responsible for the existence of several well-known brands of garment which incorporate two classes of material and to a lesser extent for the use of yarns spun from mixtures of two materials.

Unshrinkability.—Knitting yarns used for garments which are often washed or exposed to the action of moisture, perspiration, etc., should be unshrinkable, as far as is possible in the yarn form.

Dyeing or Bleaching Properties.—It is of great importance that yarns should dye or bleach uniformly, easily, and to good color, as, in the majority of cases, it is more advantageous to dye subsequent to knitting.

Tensile Strength.—Other things being equal, the yarn which shows the greatest tensile strength is to be preferred, but abnormal strength is not required in knitting yarns, as the resulting fabrics are not intended to support loads, and tensile strength is not necessarily a proof of good wearing quality.

These are all properties of what the manufacturer would consider to be an ideal yarn from the knitting point of view and are worthy of consideration inasmuch as the nearer the spinner can approach this ideal the more likely it is that his production will find favor. It is, of course, indisputable that most of these properties can only be acquired at the expense of increased cost, and we in Leicester are quite aware that we can have them all if we will pay for them. Bearing this in mind I must deal briefly with one of the difficulties with which we are faced in purchasing yarn. Hosiery manufacturers are, at the present time, the victims of the "fixed buying price"—which means that there are certain fixed prices at which our customers buy their goods. These prices are maintained at fixed levels by the buyers, irrespective of the price of raw material, with the inevitable result that a rise in the price of yarn must be followed on our part by the purchase of a lower quality yarn at the same price. This, of course, almost invariably leads to knitting troubles for which the spinner is often blamed, whereas actually the fault is with the buyer who insists on his fixed price. From the manufacturers' point of view it does not pay to buy poor yarn, and I am sure you will appreciate that when forced to buy lower qualities the relative importance of what we understand to be inevitable faults assumes very great significance.

(*Continued on Page 23*)

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5,000 LETTERHEADS - $12.95

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5,000 Small Envelopes - - $ 8.75
5,000 Outlook Envelopes 6¾" $11.15

(Regular and Outlook Envelopes may be included in single order for 5,000 at pro rata cost. Simply specify quantity of each kind desired.)

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David Clark, President
CHARLOTTE
NORTH CAROLINA

TEXTILE BULLETIN

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Contributions on subjects pertaining to cotton, its manufacture and distribution, are requested. Contributed articles do not necessarily reflect the opinion of the publishers. Items pertaining to new mills, extensions, etc., are solicited.

Maintain Wage Standards

BECAUSE it expresses our sentiments, we are printing below a circular letter which Joshua L. Baily & Co. has recently mailed to their customers:

> We are not in sympathy with reported reduction in wages by a few mills, with resulting burden upon operatives and dilution of purchasing power. We do recognize active competition developed by modern facilities and increased efficiency makes for a healthy and vigorous industry. As a constructive influence looking to the future of the industry our mills have voluntarily authorized us to stamp on invoices the following statement:
>
> "GOODS COVERED BY THIS INVOICE HAVE BEEN MANUFACTURED IN CONFORMITY WITH THE WAGE STANDARD OF THE COTTON-TEXTILE INDUSTRY (MINIMUM RATE OF 30c PER HOUR)."
>
> We are approaching the time when purchases for Fall will be made and it is desirable that the trade in making commitments shall have confidence that values will be sustained insofar as assurance of this may be afforded by continuance of standard wage payments by the industry. We believe that active support at this time by mills as well as their customers of this movement to arrest breaking down of the minimum wage scale of the industry, will contribute materially to the well-being of all connected directly or indirectly with our industry. Various divisions of the industry are so closely inter-related that we feel wholesalers, converters, cutters and distributors, all have vital interest in this situation and constructive co-operation now may mean a great deal in the way of opportunities for successful future operations.

We have never seen general wage reductions benefit cotton mills as they usually result in the price of cotton goods being reduced as much or more than an equivalent of the reduction in the costs of production as represented by the reduction in wages.

The usual net result is the taking of money out of the pay envelopes of the workers and giving it to the buyers of goods.

A reduction in wages by a single mill may financially benefit that mill for a few weeks but common sense and experience should tell those who make such reductions that any advantage they may gain is only a temporary advantage.

Mills competing with such mills are soon forced to make similar reductions and when buyers learn that there has been a general reduction they demand an equivalent reduction in the price of goods and usually get same.

Wages of cotton mill employees are not too high; in fact, they are much lower than we would like to see them.

Reducing wages at this time will be unfair to the employees without increasing the profits or reducing the losses as the case may be.

Individual mill reductions will lead to general reductions and offer benefits which are only temporary.

We sincerely hope that other selling agents will join Joshua L. Baily & Co. in opposing wage reductions.

Blue Ridge Parkway and Blowing Rock

THOSE who expect to attend the meeting of the Southern Textile Association at Blowing Rock, N. C., June 19th and 20th, will be interested in the fact that the Blue Ridge Parkway, now under construction, will touch a corner of the Blowing Rock.

The Blue Ridge Parkway, generally known as the Scenic Highway, starts at the Shenandoah National Park in Virginia and runs along the top of mountain ridges to the entrance to the Great Smoky Mountain Park in North Carolina and Tennessee.

Entering North Carolina the Blue Ridge Parkway goes to Roaring Gap and thence along high mountain ridges to Blowing Rock. Leaving Blowing Rock it goes high up on Grandfather Mountain and comes down at a point near Linville.

It crosses the famous Linville Gorge upon a suspension bridge about 200 feet from Linville Falls and then goes by Little Switzerland to Mt. Mitchell, which is the highest mountain east of the Rocky Mountains.

It then goes through the Rhododendron Gardens and around Asheville to Mt. Pisgah and the Pisgah National Forest and across Eagles Nest near Waynesville into the Great Smoky Mountain Park through Socco Gap.

The Blue Ridge Parkway will cost approximately $20,000,000, but will open to American tourists the most beautiful scenery in the world.

It is being constructed in sections of about twenty miles each and six of the North Carolina sections, one of them touching Blowing Rock, are now under construction.

We thought that this information about the Blue Ridge Parkway would be interesting to those who expect to attend the meeting of the Southern Textile Association at Blowing Rock, N. C., June 19th and 20th, and we suggest their planning to take sufficient time to go up on Grandfather Mountain and get an idea of the magnificent scenery which the Parkway will disclose.

Another Act Invalid

(Journal Patriot, North Wilkesboro, N. C.)

Decision of the United States Supreme Court invalidating a number of widely popular New Deal measures has brought that body in for quite a bit of criticism by some people who do not like the decisions.

The Supreme Court decisions are not based on what the people want but whether or not the law in question is backed by authority given the Federal Government by the Constitution. Interpretations by various courts and various jurists may vary greatly but as yet no better plan has been devised for testing laws than by the high tribunal.

This restraint on the Federal Government by the Supreme Court may seem quite a millstone at times of particular stress, but before any rank things are said or done, one should consider the future and the stability of the Government.

The Constitution is so written that people cannot go off half cocked and change it overnight only to wake up next morning and find that they have made a mistake of fatal significance. The nation's charter cannot be changed except by vote of a two-thirds majority of the States and such procedure takes time—time enough for people to fully make up their minds in a sane manner as to whether or not they want the change and consider the consequences of such change.

If the National Constitution needs changing there is no better or sounder way to go about it than by strict interpretation by the Supreme Court. If times have so changed that the Federal Government needs more power the recourse lies in amending the Constitution to give it such power and not in trying to get around the document or hoping that the Supreme Court will wink at the laws in conflict. In the meantime, the people would have ample time to consider whether or not they wished the Federal Government to have more power. Power in wise hands is all right, but we must remember that the same power would be in the hands of future administrations if it was granted to the present rulers of the nation, and who is able to tell what kind of executives and law makers we may elect in the years to come?

Picketing in Georgia

(Anderson Daily Mail)

A Georgia court has sentenced a number of textile strikers to terms of imprisonment for mass picketing. We assume that the charge includes the exercise of violence on the part of the pickets during the course of a strike at the mill where they were employed, but are no longer.

Picketing is dangerous business, although the right of the strikers to picket peacefully is generally recognized. But so few strikers stay within their rights when there is ill feeling between striking and non-striking units. We have seen incidents of this kind in Anderson County and may see them again, but probably not for a number of years, for these incidents to which we refer are fresh in the memory of those who figured in two tragic clashes.

The Georgia incident, however, is a reminder that the proper authorities should take cognizance of incidents of this kind and persons found guilty of unlawful picketing should be made to pay a penalty for it.

Cannon Mills Aid Schools

The action of the Cannon Mills in advancing $11,000 to the schools of Kannapolis so that they might run nine months is about the finest gesture that we have heard of in a long time. With spirit and generosity like this, it is no wonder that the Cannon mills rank high in the industrial world.—*Gastonia Gazette.*

A Modern Idea

It is suggested that every American be compelled to go to school until 22 years of age, to cut down the competition for jobs.

It might be simpler to keep everybody in school until 60 and then give everybody a pension of $200 a month. What could be simpler than that?—*From Arthur Brisbane's Column.*

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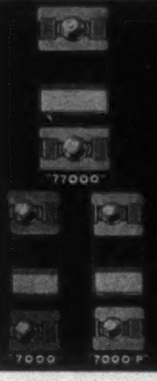

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Mill News Items

LAURENS, S. C.—Laurens Cotton Mills are equipping their automatic spoolers with a vacuum lint and dust collector, manufactured by The Textile Shop, of Spartanburg, S. C.

SANFORD, N. C.—After going through two weeks of training, operatives in the local plant of the High Point Overall Company have begun the manufacture of work pants, which the company will make at the Sanford branch, recently established.

COLUMBIA, S. C.—The assessed value placed on the Santee Mills at Bamberg, in Bamberg County, by the South Carolina Tax Commission for the year 1935 is $100,000. This is the only textile plant in that county.

LAWRENCEVILLE, VA.—The Garment Manufacturing Company, Inc., with maximum capital of $10,000, has been chartered to do a general garment manufacturing business. W. S. Peebles, Jr., of Lawrenceville, is president of the new corporation.

THOMASVILLE, N. C.—The Fremont Hosiery Mills, manufacturers of anklets and half hose, have appointed Iselin-Jefferson Company, New York, as their selling agent.

Richard T. Sharkey, until recently with the Haywood, Mackay Hosiery Department of Bliss, Fabyan & Co., which handled the Fremont account, has become associated with the hosiery department of Iselin-Jefferson, for whom he will cover the Middle West.

YORK, S. C.—The York Wilson Cotton Mills property at Red River, consisting of 100 acres and about 100 buildings, was sold at auction here by T. H. Merritt, York county tax collector, to satisfy unpaid tax claims, and in the absence of other bids the property was bought by the York county forfeited land commission for the amount of taxes due, $2,845.

No machinery is listed in the tax returns. The mills shut down several years ago.

COLUMBUS, GA.—Contract for an addition to the plant of the Swift Manufacturing Company here to cost around $10,000 has been awarded to the A. K. Adams Company, of Atlanta.

The addition is to be of brick and concrete 72x121, three stories in height, construction to begin as soon as possible. The first floor will be used for the machine shop and the upper floors will be used in connection with the finishing department. The company officials plan to relocate their machine shop and supply room.

GAFFNEY, S. C.—In an order signed by Judge J. Henry Johnson, two $25,000 insurance policies on the life of H. C. Wheat, former president, have been declared to be part of the assets of the Irene Mills. Filed in the office of Clerk of Court J. Conrad Jones, the order appoints Maj. Henry C. Moore, who has been receiver of the Irene Mills, as trustee of the Irene Mills, and directs the receiver to turn over the assets to the trustee. The order says the insurance policies were cited as additional protection for the purchasers of certain "gold bonds" which were sold by the Irene Mills several years ago. The trustee was directed to retain possession of the policies until further order of the court.

Mill News Items

Sylacauga, Ala.—The Textile Shop has just completed overhauling and re-covering slasher cylinders in the Sylacauga and Alexander City plants of the Avondale Mills.

Clifton, S. C.—The Textile Shop, of Spartanburg, S. C., are equipping the automatic spoolers in the Clifton Manufacturing Company with their vacuum lint and dust collector.

Burlington, N. C.—Recent investment in additions to Burlington Mills Company properties in this area, including a one-story addition to Unit No. 3, now under construction, is believed to approximate $150,000. This unofficial estimate is based on an addition to a unit at Ossipee, a steam plant, and the addition at No. 3. Work will be made available to approximately 100.

Fort Mill, S. C.—The Springs Cotton Mills are constructing 18 houses between Fort Mill and Steele Creek to be used for the operatives of the two local units of the mills. The Rock Hill Lumber Company of Rock Hill, S. C., has the contract for the construction work. The same construction company is erecting 17 new homes for the Springs Cotton Mills at Kershaw for the operatives of the Kershaw unit of the mills.

Winder, Ga.—The building that was occupied by the Georgia Pants Company, which concern is being transferred to New Orleans, is being taken over by the Barrow Manufacturing Company, which company is installing their equipment in this building. It is estimated that when the Barrow company has all of the equipment set up there will be an increase of about 25 per cent in production, bringing the present production up to about 1,100 dozen each week. This company has been operating steadily, according to an announcement, since last November 15th, on spring materials.

Lowell, N. C.—At a hearing at Shelby, Federal Judge E. Y. Webb made permanent a recent temporary receivership under Section 77-B of the National Bankruptcy Act for the National Weaving Company at Lowell.

A. C. Lineberger, Jr., and H. M. Wade, the latter of Charlotte, are the trustees. Under the original order they were given $1,000 a month each.

Whether the mill will be continued in operation under the receivership could not be ascertained. It was believed that the trustees have authority to operate the plant.

Creditors were given until July 15th to file their claims. Ninety per cent of the creditors signified their assent to the order making the receivership permanent.

Subsidiary for Franklin Process Co.

The Western Dyeing and Processing Company, Chicago, is to become a subsidiary of the Franklin Process Company, Providence, R. I., and will operate as the Western Franklin Process Company in its present plant.

William Stahl will be president and general manager of the subsidiary, which plans to improve and extend its facilities. Latest type Franklin Process package dyeing equipment will be installed, together with latest type winding and other accessory machinery. There will be no interruption in production.

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Link-Belt Power Transmission Catalog

Announcement is made by Link-Belt Company, Chicago, that it has just published a new 208-page catalog No. 1500 devoted exclusively to power transmission equipment.

The new book features the recently announced line of Link-Belt anti-friction roller bearing units, as well as an entirely new group of streamlined babbitted bearings, several new types of take-ups, and many other raw products.

Drop hangers, cast iron and pressed steel; pulleys of all types, including steel split construction; gearing, cast and cut tooth types; shafting; shaft couplings, rigid and flexible; safety collars; grease fittings, etc., are also included.

The book contains many illustrations, gives dimensions, weights and list prices, and contains a cross reference index for convenient use of engineers and plant managers.

The new book is offered to anyone interested in power transmission equipment. The reader's request may be addressed to Link-Belt Company, 2410 W. 18th street, Chicago, or to the nearest office of the company.

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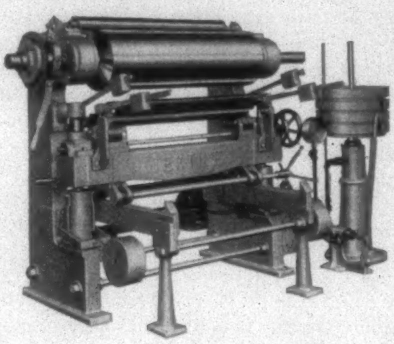
Engraving Proving and Sample Printing Machine

THE Textile-Finishing Machinery Company of Providence, R. I., has recently designed and built a new engraving proving and sample printing machine (patent applied for) that is used for proving the engraving on copper printing shells, and has for one of its objects a quick and simple mounting of these shells for testing purposes, previous to placing them into commercial production without tying up the large or standard production machine.



The company explains it is usual in fabric printing to set up a standard printing machine with new engraved copper shells and run a length of cloth which is then developed and finished to see whether or not any imperfections show due to improper engraving or printing dyes; and while such tryout is made this large and expensive machine is out of production with a corresponding increase in production costs.

Full sized printing shells may be tried out under actual working conditions and pressure in this new patented machine which is less expensive and which affords an opportunity for quickly mounting and more easily testing out these shells than has heretofore been possible, and yet the manner by which this is accomplished is no convenient that many shells or combination of dyes may be tried out in a very short time.

The method of applying the pressure for testing and proving the engraved shells on this machine under actual working conditions is by hydraulic pressure. The machine is so designed for mounting the copper shells that they may be readily moved to and from the working position with easy access to the printing machine cylinder and doctor blades.

It should be noted that the adjustments of the supports for the copper shells to and from each other are laterally of the machine to accommodate shells of different widths or diametric dimensions. Another advantage is the distribution of pressure on the roll by means of both horizontal and vertical rack so that same will be evenly and accurately forced into engagement with the work, the manufacturers state.

This machine can also be used for making samples or for trying out the colors of dyes previous to their use in commercial production.

Where short samples are desired they may be attached to the grey by an adhesive tape or similar method for printing, or the grey itself may be printed and then cut into desired lengths. Usually short pieces of a yard square or so are of particular advantage in proving that the new copper engraved shell is correct to use in the larger or production machine.

Faults To Avoid in Hosiery Yarns

(*Continued from Page 17*)

In these circumstances a comparison between two spinners' yarns at the same price often resolves itself into a comparison of suitability for the particular purpose and knitting properties rather than a comparison of actual value offered. In this respect at least the importance of a closer understanding between spinner and manufacturer cannot be over-emphasized. Such understanding will undoubtedly be helped as the manufacturer becomes more technically minded, especially as regards the aspects of the textile industry outside his own particular branch, and any co-operation along these lines must be to our mutual benefit.

World's Rayon Yarn and Fibre Output Passed Billion-Pound Mark in 1935

The world's production of rayon yarn and staple fiber for 1935 passed the billion-pound mark for the first time in the history of the industry, according to figures compiled by the *Rayon Organon*, published by the Textile Economics Bureau, Inc.

Actual production last year aggregated 1,069,902 pounds, a gain of 246,721,000 pounds, or 29.9 per cent, compared with production of 823,181,000 pounds in 1934. Rayon yarn production in 1935 aggregated 963,063,000 pounds, an increase of 22 per cent over the 1934 figure of 769,396,000 pounds. Rayon staple fiber output for 1935 was 133,839,000 pounds, an increase of 148 per cent, compared with 1934 output of 53,785,000 pounds.

Practically every important producing country contributed to the gain last year. Japan, however, has made a decided imprint on world rayon production. Negligible in 1918, and only 2 per cent of the world output in 1925, she had increased to 22 per cent by 1935. She became second largest producer in 1934 and has continued emphatically so in 1935. Japan's export business, the *Rayon Organon* points out, is a tremendously important factor in the growth of her domestic rayon industry.

The United States retained its share of about one-fourth of world production in 1935. Germany also has kept her 13 to 14 per cent of the total. Italy has consistently been losing its share of yarn production but its total yarn and fiber output was not far below the 1925 level of 15 per cent. Great Britain has for several years been getting about 11 per cent. France has been losing from one point of view, namely, her share on a percentage basis, but she has not lost to any great extent.

The following table shows the total rayon yarn and staple fiber production of the more important producing countries for 1935, as compiled by the *Rayon Organon*:

	1935 (Lbs.)
United States	261,659,000
Japan	237,943,000
Italy	152,000,000
Germany	135,000,000
Great Britain	121,500,000
France	60,800,000
Netherlands	21,150,000
Belgium	14,000,000
Russia	13,200,000
All others	52,650,000
World's total	1,069,902,000

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Notes On Cotton-Warp Sizing

(*Continued from Page 10*)

penetrate and they slough or dust off instead of adhering to the yarn. These results were obtained with 3.7 per cent starch-pastes boiled for 1 hour at 100° C. It is probable that, upon continued boiling and agitation until the potato starch granules are thoroughly disintegrated, the results may be more favorable.

STARCH FILMS

Tensile Strength and Flexibility.—Starch films have tensile properties similar to those of ductible metals and there is apparently little difference in this respect between one starch and another. Experiments have been made on the tensile strength of films made by drying starch-pastes such as are commonly used in sizing. The results show that starch films are more brittle in dry atmospheres than in moist. Weaker films are obtained if the starch has been partly dextrinized, oxydized with hypochlorites, or otherwise more or less solubilized; furthermore, any admixtures such as soap, glycerine, oils or fats tend to weaken the starch-film although such admixtures may be desirable on other grounds. Moreover, drastic chemical treatment or the use of alkali, soap, or excess of hard fat renders starch more brittle.

Moisture Properties.—The various starches are all about equal in moisture absorbing capacity. Starch alone boiled and dried absorbs about twice as much regain-moisture as raw cotton and is, therefore, no mean weighting or deliquescent agent. Starch films at a relative humidity of 80 per cent or over become soft and plastic, yielding readily to any stress, although the strength of the cotton yarn itself is improved. Hence, exposure of sized yarn to high humidities or the use of highly deliquescent size is not desirable.

SOFTENERS

Amount and Kind.—There seems to be no hard-and-fast rule regarding the amount of softener to be used in warp sizing; therefore each mill uses what it deems best. The British Cotton Research Association found that up to 5 per cent of softener on the weight of the starch did not appreciably reduce the adhesiveness of the starch, but beyond that figure there was a gradual reduction in the strength of the starch film. It is believed, however, that in batches where 1 pound or more of starch is used to 1 gallon of size, the softener can be increased above 5 per cent without appreciably decreasing the strength of the starch film.

The acidity of the softeners should be low, as otherwise the squeeze rolls of the slasher may be affected. Emulsified softeners are preferred over raw oils and fats since they mix more uniformly, allow better penetration of the size, and form smaller globules of fatty matter. It is stated that excess fat may have a tendency to interfere with the proper penetration of the size and also to reduce the transparency of the starch-paste. On the other hand, it is to be noted that softeners tend to increase the resistance to rubbing. It is also claimed that the fatty ingredients in a sizing compound have a tendency to reduce the rate of congealing of the starch with the result that the size will remain fluid while passing through the squeeze-rolls and remain so until its water content is evaporated on the slasher drum or cylinder.

Effect on Flexibility.—It is stated that brittle films are produced when an excess of a hard fat such as tallow is introduced, the deterioration in flexibility becoming marked when more than about 5 per cent of fat is present. These observations suggest that excess of fat may give rise to the dusting of size which is troublesome in some mills, and this is borne out by observations in the laboratory.

(*To be continued*)

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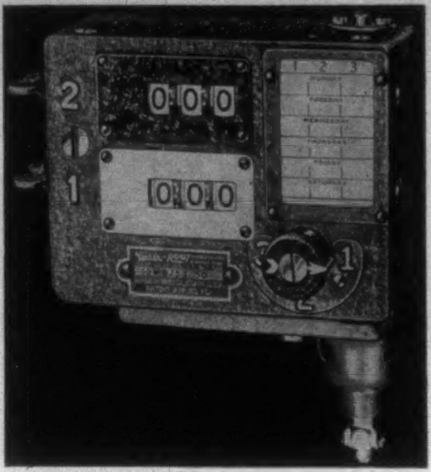
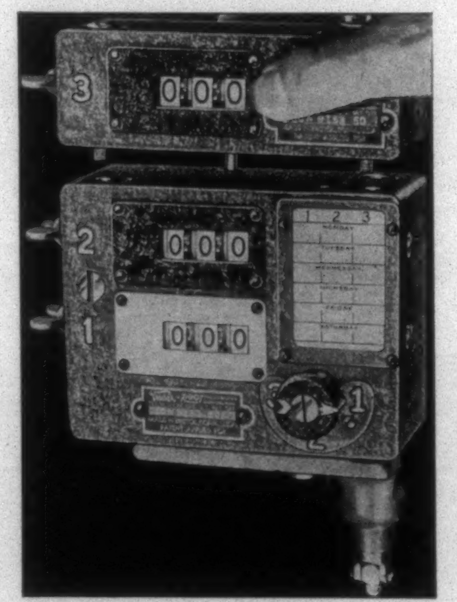


The new Veeder-Root 2 Shift Resetting Pick Counter which can be converted into a three shift counter at any time after installation by adding a third shift unit.

New Veeder-Root 2-3 Resetting Pick Counter is Two Counters in One

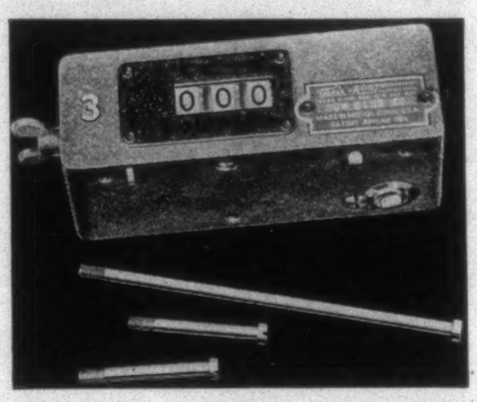
Veeder-Root has announced a new resetting pick counter said to be revolutionary in design—a pick counter described as two counters in one. The new counter is called the 2-3 (two-three), the name being derived from the fact that the counter can be bought in two separate units as the needs of a mill owner may dictate. The principal unit is a new two-shift resetting pick counter complete and ready for installation. If and when the need arises, a separate third shift unit can be bought and mounted in place on the two-shift counter providing a complete counter identical in every respect to a new three-shift counter installed as original equipment.



Here is shown the assembling of the Veeder-Root two shift resetting pick counter and third shift unit into a complete three shift pick counter. To convert the two shift pick counter into the three shift pick counter simply take out three screws, slip the extra unit into place and replace the screws. The operation is done quickly at the mill.

The accompanying illustrations show (1) the new Veeder-Root two-shift counter, (2) the third shift unit with the three screws used for mounting, and (3) the complete three-shift counter being assembled. To convert the two-shift counter into a three-shift counter, it is only necessary to take out three screws, slip the extra unit in place and replace the screws. The operation is easily and quickly done at the mill. These new counters can be mounted on any Root-type drive in use in mills.

Many other advancements in counter design are incorporated in the new 2-3 counter in addition to its convertible feature. The makers cite these: A new double acting locking mechanism with large key for ease of unlocking; figures positively aligned after resetting; positive prevention against creep of any shift when it is declutched; individual naval bronze worm drives for each shift; special alloy brass hobbed worm gears; replaceable naval brass bearings; steel inserts for mounting. The new 2-3 counter has a double seal.



The Veeder-Root third shift unit and the three screws used for mounting it in place on the two shift pick counter.

Bids On Experimental Blankets

Philadelphia, Pa.—Bids on an experimental lot of 500 olive drab cotton blankets, 84 by 66-inch finished size, weighing 3 pound, 6 ounces, for the Civilian Conservation Corps, will be opened here June 24th under Invitation 311.

The specifications state that reclaimed cotton or waste of any sort is prohibited and the blankets shall be made of "harsh type" American cotton only. It is required that the blankets shall be napped on both sides sufficiently to render the yarn and weave indistinguishable.

Minimum count in the finished blanket shall be 36 warp and 50 filling, both warp and filling yarns to be singles. The weave is identified in the invitation as "a two-in-one four-harness filling flush satin on both face and back." Minimum breaking strength is set at 45 pounds in warp and 60 pounds in filling. Quick delivery is required.

FOR SALE

Novelty Yarn Plant, now in operation. Selling Dept. Stores and Jobbers from Mass. to Fla. Hand knitting yarns. Production 1,500 lbs weekly. Two novelty twisters, 2 reels, 1 Universal winder, 3,500 Lestershire spools, 2 5-horsepower motors. 2,500-lbs. stock. Will sell with or without stock. Write for further particulars.

"Yarn Plant,"
Care Textile Bulletin.

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J. P. Stevens & Co. Gets Road Cottons

Washington.—The J. P. Stevens & Co. was awarded the entire contract for furnishing cotton textiles to the Agricultural Adjustment Administration for road building purposes on which bids were opened here May 28th in accordance with Schedule CPS 32.

Japan Aiding Cotton Planting in Shantung

Washington. — Japanese cotton manufacturing interests in China are continuing their efforts to increase the production of cotton in Shantung Province, according to a report from Consul Samuel Sokobin, Tsingtao, made public by the Commerce Department.

The Japanese Cotton Mill Owners' Association in China is reported to have recently purchased in Chosen 133,000 pounds of "American-type" cotton seed to be distributed free to Chinese cotton growers in Shantung. The seed will be apportioned to the district magistrates of Shantung Province in the cotton growing region along the Yellow River north of Chang-tien and east of Tsinan, it was stated.

The seed, it is pointed out, was obtained in Chosen because of successful experiments there with seed suitable for cotton production in Shantung. This is the third such distribution in three years, the first, in 1934, placed 47,000 pounds of seed among the farmers, and the second, in 1935, 87,000 pounds.

The Japanese press in Tsingtao, the report states, has given some prominence to the endeavor of the local Japanese cotton mills to obtain adequate supplies of native grown cotton. Plans for financial and other aid to Chinese cotton growers are intimated.

Classified Department

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Measurement Of Rayon Luster Described

The relative amounts of luster of rayon and other textile yarns and a method of measuring them were outlined in a recent talk by G. P. Hoff, manager of Chemical Research, viscose rayon research division of Du Pont Rayon Company before the conference of the Fam Chemurgic Council in Detroit. The following is quoted from Mr. Hoff's paper:

"We devised a method for measuring the amount of light directly reflected and the amount of light diffused. One is called specular reflection and the other diffuse reflection. We established a ratio in terms of per cent luster and we then had a scale ranging from 0 to 100 per cent. On this scale we rated a mirror 100 per cent and magnesia as 0 per cent. Natural or bright acetate rayon, to use the common expression, ranks very high, on this scale 80 per cent—viscose rayon is a close second with a ratio of 70 per cent. Silk ranks 40 per cent and cotton is at the bottom with 4 per cent.

"Before the textile trade and the ultimate consumer were satisfied the per cent luster of rayon was reduced to as low as 1½ per cent and the general fashion trend caused the silk manufacturers to dull the luster of their product as well. The pendulum has now swung back somewhat and today there is a demand for bright rayon (70-80 per cent luster); semi-dull (20-25 per cent luster) and dull (1½ to 4 per cent luster). If there are further fluctuations in demand in the future, these can readily be accommodated because means for varying and controlling the luster at any specified level have been thoroughly worked out."

Considers Consolidated Textile Tax Claims

Claims asserted by customers of the Consolidated Textile Corporation for refunds as a result of the invalidation of the processing taxes levied under the AAA were considered before Referee Peter B. Olney in connection with the efforts of the company to effect a reorganization under Section 77-B of the Bankruptcy Act.

It was disclosed that prior to the decision of the Supreme Court holding the triple A invalid, the company entered into agreements with its customers to grant refunds in the event that the law was held unconstitutional. Refunds amounting to approximately $20,000 were made before the 77-B proceedings were instituted, and about $40,000 is being held in escrow to make additional refunds subject to the approval of the court.

Scheduled hearings before the referee to determine the feasibility of the proposed plan of reorganization were adjourned until June 17-18-19 from 10 a. m. to 5 p. m., and the hearing on the refund claims will be continued on June 10 at 2 p. m.

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Cotton Goods Markets

New York.—The cotton goods markets continued active last week, especially in coarse yarn gray goods. Sales in this division were well above production, although not so large as during the previous week. In addition to the good business in print cloths, there were larger sales of sheetings, drills, twills and other fabrics. Prices were firm with some advances noted.

Mills are in a much stronger position than they were several weeks ago, recent business having served to reduce stocks at the mills and to give them a substantial increase in unfilled orders. In print cloths, buyers placed large orders for delivery a few weeks ahead although they were not willing to follow all the advances for long future delivery.

Sellers of finished goods were encouraged by the better business of the week, buyers taking large quantities of colored goods. Prices were virtually unchanged, but advances are expected soon. Sheets and pillow cases and garment fabrics also showed good increases in the volume done.

The fine goods section noted further interest in combed broadcloths, which have lagged behind both the coarse goods and other fine goods for some months. Some indications that these are due for an advancing trend were seen, especially as buyers scoured the market and found that the lowest of recent offerings were no longer available. The belief was that production had declined sharply, and that with moderate trading prices may soon show appreciable gains. Current prices are said to represent sharp losses on replacement.

Rayon fabrics also were active. Garment manufacturers specializing in moderate priced merchandise, as distinguished from those producing cheaper goods, were active buyers in the rayon cloth market.

The buying movement by now has gained sufficient momentum to make it virtually certain that there will be further covering. The price trend is definitely upward higher levels, and buyers are inadequately covered against their summer needs.

Print cloths, 27-in., 64x60s	3⅞
Print cloths, 28-in., 64x60s	4
Gray goods, 38½-in., 64x60s	5¼
Gray goods, 39-in., 80x80s	7⅛
Gray goods, 39-in., 68x72s	6
Brown sheetings, 3-yard	7⅞
Brown sheetings, standard	8
Tickings, 8-ounce	15¼
Denims	13
Brown sheetings, 4-yard, 56x60s	6¾
Dress ginghams	16
Staple ginghams	8½

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Cotton Yarn Markets

Philadelphia, Pa.—The advance in the price of cotton and the sustained call for deliveries created a stronger market for yarns last week. Spinners are much more hopeful now of being able to advance prices on both carded and combed numbers.

Some houses already have begun quoting higher and their new asking prices are up a half to 2 cents a pound. Others wish to delay such a state until buying broadens more. It is implied that those boosting their quotations already have booked considerable business at the lower prices and believe they can afford to adopt an independent attitude.

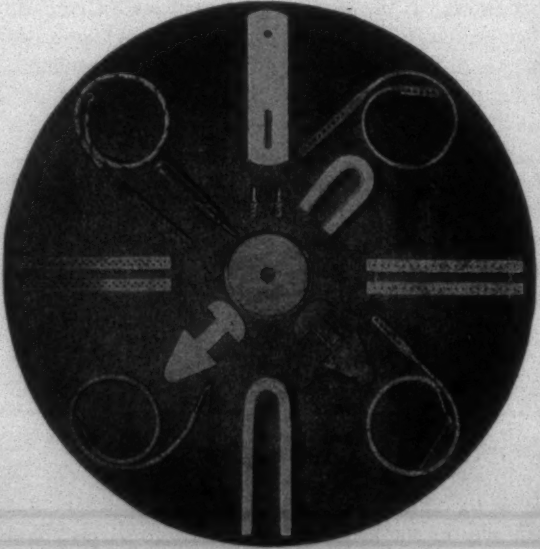
In some quarters, it is reported an active interest has sprung up for spot and nearby shipments ranging from small lots to 50,000 pounds. As already noted, since the latter part of May more buyers have disclosed their intention of covering through to September, but sellers claimed the offered prices were too low.

The finer counts of better quality carded and combed yarns appear likely to be marked up as rpaidly as possible, occordin gto some distributors here, who state that their sources no longer are willing to consider prices offered by customers, but, instead, are insisting that this type of yarn must be merchandised according to its value, regardless of what is happening to ordinary quality yarns.

Most of the commitments placed involved small quantities, generally under 10,000 pounds. Some covering developed from 25,000 to 50,000 pounds and there were also inquiries for more appreciable poundage. In general, prices were firmly maintained. Efforts to locate the low selling levels of recent weeks disclosed they had practically disappeared.

In the ply combed peeler division, sales vary from week to week, but shipments have average between 900,000 and one million pounds weekly since the first of the year and production has apparently been co-ordinated closely to delivery requisitions.

Rice Dobby Chain Company



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Patent No. 1863271
July 14, 1932

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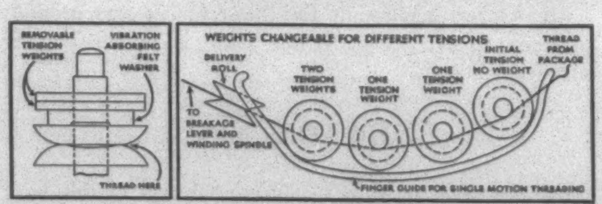
Comparisons have shown that the cloth produced from bobbins wound with the Disc-Quil is superior to cloth produced with other tensions. It allows overend delivery at high velocity and produces a bobbin that will DELIVER UNIFORMLY in the shuttle.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Gradually increasiag tension is adjustable for regular and high-twist yarns. No wrap of yarn when under tension; no friction felts; no snubbing of yarn.

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2577

Visiting The Mills

By Mrs. Ethel Thomas Dabbs (Aunt Becky)

LINCOLNTON, N. C.

Carter Mill No. 1 is located here and No. 2 is in Taylorsville. These are the property of the well known A. B. Carter, who was for many years secretary of the Southern Textile Association.

J. H. Clark is superintendent of Mill No. 1, at Lincolnton; Ed McGee is general overseer carding; S. P. Gordon, general overseer of spinning; Sam Digh, overseer winding.

J. H. Clark, Superintendent

On second shift, W. H. Troxler is general overseer carding; D. H. Tucker, spinner, assisted by J. E. Clark; Will Jones, winder.

A. B. Carter is president and treasurer, and C. N. Alexander, of Lincolnton, is manager of both mills. 20s, 24s to 40s carded yarns are made.

Mr. Carter has one of the finest homes and grounds anywhere in that section of the State, and keeps making improvements.

NEWTON, N. C.

I always look forward to my annual visit to this busy and progressive mill. Found a new superintendent here—H. J. Wood, who has for some time been in the New England States, but is a Southerner, and glad to be "back home."

Geo. W. Setzer, master mechanic, is a very interesting gentleman. He owns a nice eight-room home on Route 2, with all modern conveniences.

C. H. Cox, overseer weaving, has a service record of 21 years; S. J. Coulter and W. C. Darnell are among the progressive loom fixers; Ed Poag is second hand on first shift weaving.

W. F. Blevins is overseer wool carding and spinning; G. V. Moser, cloth inspector; Marvin McGee, checker.

D. E. Sherrill is overseer cloth carding and spinning; Carl Hendrix, dyer.

R. A. Fairchild, assistant overseer, used to be in Mooresville and it had been years since I had seen him, but knew him.

In the knitting department one sees many interesting machines—for instance, Jacquard knitters. Arthur Saunders is overseer knitting.

Sylvester Lester is Jersey knitter, and Glenn Bostian, fixer.

AVONDALE, N. C.

CLIFFSIDE MILLS—AVONDALE PLANT.

Happened here in rose time and can't imagine a more gorgeous sight than that which greets the eye and holds attention from the highway to mill office. Red, pink and white roses have covered the Cyclone fence, and every unsightly red bank on down to Cliffside, several miles away, is draped in a blanket of lovely roses.

Inside the mill, lovely colors fascinate one, and especially in the cloth room where pretty curtain goods are attractively displayed. The product here is varied. Chambrays and other goods especially for kiddy play-suits, are especially good quality.

T. A. Hampton is overseer carding; J. R. Frye, overseer spinning; J. W. McGraw, formerly with Grace Mills, Rutherfordton, is overseer weaving; S. A. Thomas, cloth room; G. A. Silver, dyer; J. E. Hall, master mechanic.

Other progressive men are H. C. Deyton and M. B. Kennedy, loom fixers; A. D. Moore, card grinder, and L. L. Wallace, section man in card room.

H. G. Rollins, superintendent, is among the most courteous, considerate and likeable textile men; one never sees him without feeling a bit more courageous and happy.

KERSHAW, S. C.

SPRINGS COTTON MILL—B. C. Baker, Superintendent.

The poppies around the reservoir across the road from the mill were beautiful, but not as fine as in the past, owing to the unfavorable weather. Superintendent Baker has an eye for the artistic and delights to make a flower grow where once a weed flourished.

Like all the mills in the Springs group, this plant is modernly equipped, and work runs smoothly. There are

965 looms on an excellent quality of broadcloth and leno.

Was glad to meet Rev. J. T. Dabney, Baptist who, with his enthusiastic members, plans a new brick church. One hundred thousand brick are already bought and paid for and they have $1,500 in the treasury. Mr. Dabney was born and reared within a few miles of Kershaw, so he is "not without honor in his own country."

This mill has a fine and dependable bunch of overseers, as follows: M. A. Crolley, carder on first, and Orson Crolley on second shift.

L. F. Adams, overseer spinning first shift and J. E. Deaton on second shift.

J. F. Chalmers, overseer weaving first and H. E. Conyers on second shift.

A. B. Adams, overseer spooling first shift and O. P. Lowery on second.

R. H. Byars, overseer cloth room; E. B. Chandler, master mechanic.

O. W. Horton, section man in spinning; L. A. Fail, second hand in weaving, and H. L. Canup, loom fixer (the latter is an N. C. State graduate), are among the "up and coming" young men at Kershaw Mill.

Several new houses have recently been built and other splendid improvements made in and outside the mill.

LANCASTER, S. C.

Springs Cotton Mills Here Enlarging

The Springs Mills at this place are probably the largest under one roof anywhere in the South, and another big weave room is going up. There are (or will be) 220,000 spindles and 6,000 looms.

A new opening unit, 120 additional cards, 4 Barber-Colman spoolers, a new slasher and tying-in machine, are a part of the new equipment.

The cloth room will be half doubled, a boiler and new turbine, also a new two-story waste house, are being added.

In fact, this place is getting so large it is almost frightening. Lee Skipper, manager, is skipping around so fast and furious that we are wondering how long it will take for him to "crack up." It must be a strenuous life, but he seems to be enjoying it.

Some Changes

James Cobb, formerly an overseer of weaving, has accepted a position with Opelika Mills, Opelika, Ala. Waller Danhoff has gone from the carding department to the position of overseer carding, Honea Path, and George L. Melton has been promoted from helper to maintenance man in the electrical department.

W. A. Lynn, who has formerly with the Eureka Mill, Chester, has "fattened up" since coming to the Lancaster Mills at this place as purchasing agent. I had to look at him a long time before I could recognize him, but found him jolly and as good-natured as ever.

C. C. Brigman is superintendent of spinning; B. L. Still, superintendent of carding, and R. H. King, superintendent of weaving. They are a trio hard to beat, and it is a pleasure to call on them. All the above and others are among our subscribers: R. F. Brown, second hand in spinning; A. B. Tennant, overseer spooling and warping; J. T. Wilson, card clothing; H. I. Richberg, card grinder; B. P. Adams, overseer carding; K. B. Collins, production manager; J. W. Mahaffey, overseer cloth room, and his second hand, C. C. McJunkin.

G. H. Williams, overseer warp preparation; W. A. Lynn, purchasing agent; Geo. L. Creswell, section man; S. S. Hardin, R. H. Turner and W. E. Wall, overseers of weaving; R. R. Templeton, night overseer warp spinning, and Lester Melton, electrician.

Several new-type modern bungalow houses are being built southwest of the mill village, each with an acre or more ground. These homes are quite different from the usual type and are attracting much attention and admiration. L. G. Dodson, probably the only man who has been here since the first mill was built 28 years ago, is outside man, and in charge of the building of these new homes, which will probably be in number, between 50 and 100.

CLIFFSIDE, N. C.

The usual write-up for this pretty mill and town comes in November. But we can't wait that long to tell of the big improvements going on.

The spinning room has discarded belt drive for individual motor drive; a lot of clean white paint has been used; there's long draft spinning, Bunchless automatic cleaners, and everything else it takes for modern equipment. J. P. Hill, overseer, has reason to be proud of his department.

Paint has been extensively used all over the mill with gratifying results. (Not talking about "rouge," for those girls don't need it; they are pretty enough "just as is.")

When one wishes to see "sunken gardens," see the grounds about this mill, which are real pictures of beauty.

Superintendent E. T. Combs seems to be "at home" and getting along nicely. A. T. Robinson, overseer warp preparation, has an interesting department. C. A. Hamrick, second hand, I. C. Bailey and J. F. Bailey, loom fixers, F. J. Swing, overseer finishing, and G. C. Compton, second hand in finishing, are among those who "signed on the dotted line" on this trip. Here's hoping that Cliffside can run steadily this summer.

GREENVILLE, S. C.

Bahan Textile Machinery Company is one of the show places in this city, and was a big surprise to this pen pusher, who had expected to see something much less important. It is a large two-story affair, has nice offices, and all kinds of machinery for making textile supplies. Seven representatives are busy on the road, while Mr. Bahan keeps an eye on things in the plant, books and ships orders.

Mills Mill Co.

At Mills Mill, where Pat McGarity is superintendent, one finds exceptionally beautiful surroundings. Some views of the grounds about the mill were shown in this section of The Bulletin last year, along with pictures of the superintendent and overseers.

The mill is nice and clean, the village has wonderful shade trees, it is not far to the City of Greenville's center, and, all in all, it is an ideal community in which to live.

Southern Sources of Supply

For Equipment, Parts, Material, Service

Following are the addresses of Southern plants, warehouses, offices, and representatives of manufacturers of textile equipment and supplies who advertise regularly in TEXTILE BULLETIN. We realize that operating executives are frequently in urgent need of information service, equipment, parts and materials, and believe this guide will prove of real value to our subscribers.

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AMERICAN CYANAMID & CHEMICAL CORP., 30 Rockefeller Plaza, New York City. Sou. Office and Warehouse, 301 E. 7th St., Charlotte, N. C., Paul Haddock, Sou. Mgr.

AMERICAN ENKA CORP., 271 Church St., New York City. Sou. Rep., R. J. Mebane, Asheville, N. C.

AMERICAN MOISTENING CO., Providence, R. I. Southern plant, Charlotte, N. C.

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ARMSTRONG CORK PRODUCTS CO. (Textile Division), Lancaster, Pa. Sou. Office, 33 Norwood Place, Greenville, S. C. T. L. Hill.

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ASHWORTH BROS., Inc., Charlotte, N. C. Sou. Offices, 44-A Norwood Place, Greenville, S. C.; 215 Central Ave., S.W., Atlanta, Ga.; Texas Rep., Textile Supply Co., Dallas, Tex.

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CAROLINA REFRACTORIES CO., Hartsville, S. C.

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CHICAGO MILL & LUMBER CO., 614 Johnston Bldg., Charlotte, N. C. Sales Staff, E. J. Mueller, C. P. Semmlow. Executive Offices, 111 W. Washington St., Chicago, Ill. Plants at: Plymouth, N. C., Helena, Ark., Greenville, Miss., Tallulah, La., Chicago, Ill.

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COMMERCIAL FACTORS CORP., 2 Park Ave., New York City. Sou. Rep., T. Holt Haywood, Reynolds Bldg., Winston-Salem, N. C.

CORN PRODUCTS REFINING CO., 17 Battery Place, New York City. Corn Products Sales Co., Greenville, S. C., John R. White, Mgr.; Corn Products Sales Co., Montgomery Bldg., Spartanburg, S. C., J. Canty Alexander, Asst. Sou. Mgr.; Corn Products Sales Co. (Mill and Paper Starch Div.), Hurt Bldg., Atlanta, Ga., C. G. Stover, Mgr.; Corn Products Sales Co., 824-25 N. C. Bank Bldg., Greensboro, N. C., W. R. Joyner, Mgr.; Corn Products Sales Co., Comer Bldg., Birmingham, Ala., L. H. Kelley, Mgr. Stocks carried at convenient points.

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The Textile Strikes

(Continued from Page 8)

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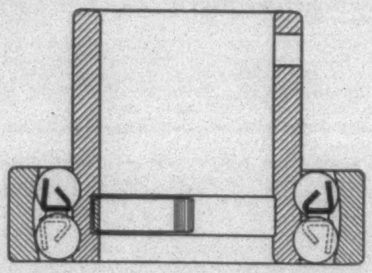
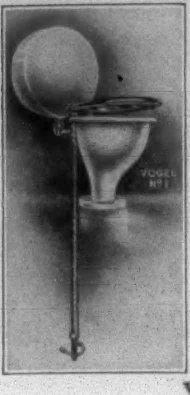
Essentially, the bearing is the conventional SKF self-aligning extended inner race bearing with an eccentric groove machined in the bore of the inner race. Fitted in the eccentric groove is a piece of spring steel known as the Grip-lock shoe. When the shoe is in the deepest part of the eccentric groove the bearing may be readily slipped on the shaft. Then, by holding the inner race of the bearing while the shaft turns in the direction of operation, the knurling at the ends of the grip-lock shoe grips the shaft, causing the shoe to wedge in the shallow part of the eccentric groove, thus securely locking the bearing on the shaft.



The company's announcement says:

"Many thousands of these bearings are now used in various machines. The simplicity of assembly without necessity for shaft machining has resulted in their use in many locations where plain bearings were considered standard.

"Users report substantial savings in assembly cost and more satisfactory results from these bearings as no radial slippage can occur, for the more the load, the tighter the grip-locks."



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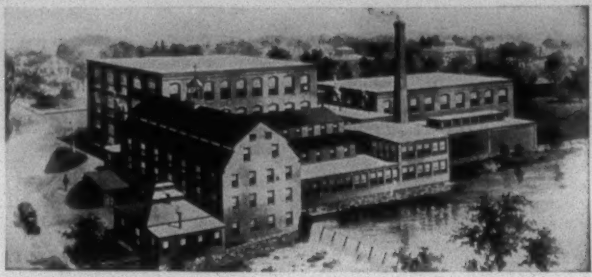

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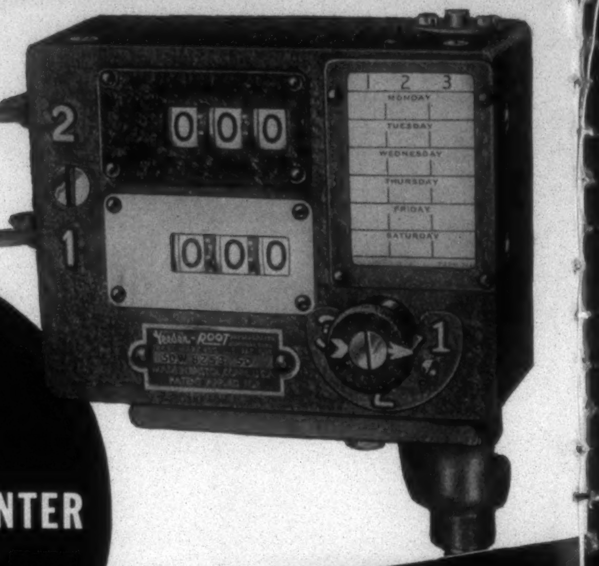

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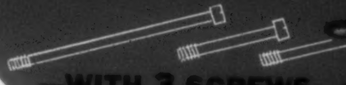

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